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An Analysis of Organizational Readiness at Anniston Army Depot for Information Technology Change
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By: Jermaine A. Hailey,
       Frederick D. Higgs
                December 2008

Advisors: Douglas Brinkley,
                 Edward H. Powley

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    The purpose of this MBA Project is to assess the change readiness of Anniston Army Depot's (ANAD) organizational climate—especially now as the Depot prepares for large-scale Logistics Modernization Program (LMP) information technologies (IT) change. ANAD is a highly important division of the United States Army Materiel Command (AMC) and is the Army's designated Center of Industrial and Technical Excellence (CITE) for a variety of combat vehicles, artillery equipment, bridging systems and small-caliber weapons. It provides advanced maintenance support for all of these systems, in addition to fulfilling a host of other vitally important Army-wide logistical functions. ANAD presently uses the Standard Depot System (SDS) to manage its complex array of administrative and logistical functions. However, AMC has mandated that ANAD completely replace the SDS and employ the new Logistics Modernization Program (LMP) starting in March 2009. The researchers gathered a combination of historical information, personnel observations and responses to survey questionnaires on readiness for change in order to conduct a quality analysis of ANAD structure and climate and their implications, if any, for LMP implementation. Ultimately, people are the heart of any IT system, regardless of its size and degree of automation. The tremendous importance of organizational personnel in the change process is often under appreciated and under addressed in the civilian sector of the military—particularly when this sector embarks on significant IT transformation initiatives. Bold IT actions inevitably have a profound impact on any organization, regardless of its size, mission, and personnel composition.

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AN ANALYSIS OF ORGANIZATIONAL READINESS AT ANNISTON ARMY DEPOT FOR INFORMATION TECHNOLOGY CHANGE

Jermaine Anthony Hailey, Major, United States Army
Frederick Devolone Higgs, Lieutenant Commander, United States Navy

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Authors: _____
                             Jermaine Anthony Hailey

                           _____
                           Frederick Devolone Higgs

Approved by: _____
                           Edward H. Powley, Lead Advisor

                           _____
                           Douglas Brinkley, Support Advisor

                           _____
                           Terry Rea, Acting Dean
                           Graduate School of Business and Public Policy

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First we acknowledge Colonel (COL), Sherry B. Keller, current commander of Anniston Army Depot, the United States Army's very distinguished Center of Industrial and Technical Excellence (CITE). She is a highly respected and very accomplished professional who is a seven-time recipient of the Meritorious Service Medal, two-time recipient of the Army Commendation Medal, the Joint Staff Commendation Medal and a host of other notable awards. She holds a Master's Degree from Central Michigan University and is a distinguished graduate from several other prominent academic and military institutions. Whenever possible, COL Keller took her valuable time and expertise to assist us, providing both scope and general direction to this project. She provided us much-needed access to her depot and pivotal personnel within her organization to complete the many necessary requirements to make this project a success. For the reasons fore mentioned and countless more, we are extremely grateful and forever indebted to her. As a personal note, I (Jermaine) cannot overstate or adequately express her impact on me personally and her significance in my development as a professional Army officer. She has been my mentor for several years and in each instance has provided extremely valuable insight and keen knowledge. She is undoubtedly the most highly respected military officer I know, and I continue to have the utmost pleasure of working for and with her whenever possible.

Ms. Ester Griguhn is the Logistics Modernization Program (LMP) Coordinator at ANAD. She is also in the final stages of her doctorial candidacy on the subject of emotional intelligence. On innumerable occasions we've called upon her to assist and provide specific guidance to shape this product and in every instance she has provided unparallel insight and direction to this project. Consistent with COL Keller, Ms. Griguhn provided us unprecedented access to two people central to SDS and LMP operations at

I.   INTRODUCTION

A.   BACKGROUND

1.   Logistics Modernization Program (LMP) Context and Background DOD Information Technology Transformation Environment

Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) have dramatically reshaped the traditional organizational structure of the United States Army and have redefined its longstanding maneuver tactics on an asymmetric battlefield. To meet and overwhelm these new advanced challenges posed in the Global War on Terror (GWOT), the Army is undergoing a remarkable transformation to a more agile and versatile expeditionary military fighting force capable of rapidly deploying around the globe in support of America's national security objectives (Carroll & Coker, 2007). LTG Steven W. Boutelle (Global Security, 2004), while speaking before the United States House of Representatives Committee on Services Subcommittee on Terrorism, Unconventional Threats and Capabilities, stated that we are an expeditionary Army supporting our Nation in the Global War On Terrorism in the midst of massive reorganization; we are creating modular fighting units capable of rapid deployment around the world. Likewise, the logistical support information systems, procedures, mechanisms and basic supply chain management functions essential to sustaining operations across the military spectrum are changing as well. The Army's information technology (IT) infrastructure is undergoing similar transformation as it strives to maintain highly responsive, seamless logistics support to warfighters directly engaging skilled enemies in a threatening environment. Combatant commanders (exercising unified military command of thousands of troops in large geographical regions throughout the world) rely heavily on the concept of anticipatory support as they conduct advanced planning and endeavor to stay ahead of enemy actions. In order to predict and to readily respond to the needs of the battlefield, commanders require timely and accurate information. With this, they can strategically shape events while maintaining real-time logistical visibility over supply-chain operations. They cannot fulfill their missions without IT support.

Information Technology is at the center of the Department of Defense (DoD) technological transformation process (Carroll & Coker, 2007). Information speed and precision throughout the Army's supply chain management apparatus are the new weapons of the 21st century. These systems are primarily focused on synchronizing various business processes across multiple operational fields in which literally thousands of individual business processes are necessary to complete critical functions. According to LTG Boutelle (2004), our military requires relevant and jointly integrated interoperability of IT systems to fight the Nation's wars. Undoubtedly, the combination of modernized DoD information management practices and commercial advances in IT would be a very powerful merger for shaping military capability. The United States Army Materiel Command (AMC) is the major army command (MACOM) charged with the unique responsibility of leveraging an array of logistical support functions for Army and Marine Corps warfighters. AMC's ability to provide quality service while making sufficient upfront IT capital investment (to access cutting-edge technology) is absolutely essential if the DoD is to modernize the Army's IT architecture and infrastructure. The focus of this chapter is on the historical context of AMC's IT transition from its traditional use of the Standard Depot System (SDS) to the Logistics Modernization Program (LMP) for managing critical administrative and operational business process functions throughout its multi-echeloned business structure (Carroll & Coker, 2007). To do this, we must thoroughly explain the AMC enterprise structure in which Anniston Army Depot (ANAD) functions, the history of its legacy IT system, and finally, the context of the LMP's development. This investigation of AMC's transformation from the SDS to the LMP will provide a basis for the researchers as we fully interpret the broad context of our examination of how large-scale IT change affects the change-readiness of personnel at ANAD.

2.   Army Materiel Command Structure and Responsibilities

AMC is one of the Army's largest major commands (MACOM) and is the principal office responsible for the service's materiel readiness. It accomplishes this task by leveraging IT, acquisition support, materiel development, logistical support enabling power projection and the sustainment of such capabilities—with a particular emphasis on

enhancing military might for future operations (Global Security, 2008a). Its headquarters is located at Fort Belvoir, Virginia. It employs over 50,000 military, civilian logistics specialists, contractors and technical experts in 149 locations across its 11 subordinate commands worldwide. It has a plethora of complex mission objectives— ranging from development of sophisticated weapons systems to advanced research and development (R&D) of various weapon system components—from high-tech maintenance of major end-items (and the distribution of the spare parts necessary to maintain them) to the handling and disposal of chemical materiel. Its three primary core competencies are acquisition excellence, logistics power projection and technology generation and application (Global Security, 2008a). AMC manages a wide variety of facilities through its multi-echeloned infrastructure. These facilities are spread throughout the world to include R&D facilities, engineering centers, the Army Research Laboratory, depots, arsenals and ammunition plants. In total, these entities maintain the Army's prepositioned stockpiles. AMC also facilitates approved United States governmental partnership agreements to negotiate and implement co-production of U.S. weapon systems with allied foreign nations.

The Tank-automotive and Armaments Command (TACOM) is the largest command under the AMC; it is responsible for managing and sustaining the Army's multi-billion dollar investments in a wide range of warfighting equipment and munitions essential for military power projection (E. Griguhn, personnel communications, June 5, 2008). It is located in Warren, Michigan, and employs over 12,000 personnel. TACOM provides a full spectrum of armament and munitions technologies, products and services. It has contracting functions as well as R&D responsibilities. Thus, it serves as a conduit between the Army, commercial environment, academia and other various federal agencies to leverage the best resources for the Army through the acquisition of ground combat, combat support and combat service-support equipment. Most importantly, TACOM is the Lifecycle Management Command (LCMC) for the Department of the Army, with the important task of maintaining various combat systems and munitions throughout the lifecycle maintenance process. The essential elements of LCMC are procurement, fielding, sustainment, retirement and disposal. TACOM LCMC

accomplishes its objectives in conjunction with three enterprise partners: the U.S. Army Tank Automotive Research, Development and Engineering Center, U.S. Army Armaments Research, Development & Engineering Center, and the Natick Soldier Research, Development & Engineering Center (TACOM, 2008). Ultimately, TACOM's military and civilian components utilize expertise and technology to find logistical solutions for soldiers. Collectively, all these unique functions and specializations are fulfilled and integrated across its five mission-specific, subordinate command depots throughout the Continental United States (CONUS).

ANAD is a division of TACOM and is the Army's officially designated Center of Industrial and Technical Excellence (CITE). The Depot is directly responsible for providing high-level expertise and materiel support in several areas critical to the Army's objective to maintain a versatile, agile and lethal force in today's environment (Anniston Army Depot, 2007). The broader significance of ANAD is that it literally touches every soldier in the Army in one form or another; its impact is far-reaching. The Depot is located in Anniston, Alabama, and occupies over 25 square miles of geography, manages over 1.6 billion dollars of annual inventory and is home to over 4,377 organic and 2, 623 tenant and contracting personnel (E. Griguhn, personnel communications, June 5, 2008). ANAD performs advanced depot-level maintenance for Army and Marine Corps combat vehicles (tracked and wheeled), artillery (self-propelled and towed), bridging systems, and small-caliber weapons (individual and crew-served). The Depot is specifically authorized to perform maintenance on vehicles ranging in size from the Stryker to the 70 ton M1 Abrams Tank and a variety of types in between—such as the M113 family of vehicles, the M88 Recovery vehicle, and the M9 Armored Combat Engineering vehicle. The Depot also overhauls and returns major components of each vehicle to stock. ANAD personnel are deployed around the world to provide fielding services and repairs in the field in direct support of our Nation's warfighters (ANAD, 2007). Combat and battle-damage repairs are currently completed both at home and abroad. ANAD also presently performs a wide range of vehicle conversions, upgrades, and new vehicle manufacturing.

Additionally, the Depot distributes stocks worldwide, and maintains and stores conventional ammunition and missiles. It stores approximately 7% of the Nation's chemical munitions stockpile (until the stockpile is demilitarized). Such functions are significant parts of the Depot's overall missions and capabilities. The Department of Defense's only missile recycling center is located at Anniston. There are several notable tenant organizations residing at the Depot that are central to ANAD's mission. These organizations include the Defense Distribution Depot Anniston Alabama (DDAA), the Anniston Defense Munitions Center (ADMC), the Anniston Chemical Activity (ANCA) agency, the Defense Logistics Agency (DLA) and the Center of Military History Clearing House.

3.   SDS and LMP History

ANAD currently uses the Standard Depot System (SDS), a legacy non-Enterprise Resource Planning solution (ERP), to manage its complex array of administrative and operational business processes across its several directorates (Acquisitions, Budget & Finance, Maintenance Management, Inventory Management, Production Lifecycle Management, Sales & Distribution, and Supply Chain Planning). According to Wailgum (2002), an ERP attempts to integrate all departments and functions across a company onto a single computer system (i.e., a single software program) that can serve all those different departments' unique functions. It is a single software program divided into software modules that roughly approximate the old standalone computer systems in each department. The SDS is not designed to perform in the respect as fore mentioned.

For more than 30 years, the Commodity Command Standard System (CCSS) and the SDS have served as the principal IT framework at AMC; they have been used to manage an array of logistical support responsibilities at all levels of the command (GAO, 1999, October). AMC is a vast matrix of depots, arsenals and R&D facilities networked globally through IT. Similar to many sizable organizations, technology shapes its business environment and is absolutely essential to AMC's ability to fulfill important mission objectives. Although the CCSS and the SDS are both widely utilized throughout the AMC command, ANAD only utilizes the SDS. It is a mainframe-based Common

Business-Oriented Language (COBOL) software program originally designed in the late 1950s. In the late 1960s, AMC adopted the COBOL program language for depots to use as they managed their basic administrative, financial, logistical, and production programs. The SDS was the key to sustaining the Army's robust supply chain over the years projection (J. Jones, personnel communications, June 25, 2008). AMC perform missions that are unique to the Army's numerous facilities around the world. As a result, over the years, each facility has specifically tailored the SDS to fulfill its particular purposes. As the world geopolitical situation changed and our military technological capabilities became more advanced, leadership noted the IT resources previously relied on to manage the logistical supply chain in support of warfighters were becoming burdensome, outdated and would no longer suffice for the new technologically driven military operational environment of the 21st century.

One of the few benefits of the SDS was that it was flexible—allowing local, non-standard software applications, updates and add-ons according to an installation's needs. Also, SDS was not a deeply integrated system; this afforded data managers an opportunity to develop workarounds to make adjustments as necessary. Although AMC successfully managed the SDS and maintained incredible productivity over the decades, ironically, the significant drawback for AMC was the extreme IT challenges it posed. The legacy system required manual consolidation and the processing of information from its various facilities into one homogenous database in order to maintain Total Asset Visibility (TAV)—the ability to provide users with timely and accurate information on the location, movement, status, and identity of units, personnel, equipment, materiel, and supplies, plus the capability to act upon that information to improve the Army's logistic practices overall. "CCSS and SDS evolved into a complex web of software solutions that were difficult to maintain and almost impossible to update to address the Army's rapidly expanding supply needs" (Carroll & Coker, 2007). Over time, as logistics requirements for the warfighter are more complex, it became clear that the SDS's issues of non-standardization among AMC facilities, of business processing redundancy, of lengthy processing turnaround times, and of considerable manual interfacing that were cumbersome tasks routinely carried out at AMC headquarters. For more than two

decades, the organization operated successfully using excessive amounts of human effort to overcome an assortment of IT challenges. Such non-value-adding workarounds and practices became routine over time—causing the Army to eventually focus on standardizing the process through some form of automation.

Two significant government legislative actions were instrumental in emphasizing the need for IT improvements within the DoD information systems infrastructure. *The Chief Financial Officers Act of 1990* and the *Federal Financial Managements Improvement Act of 1996* were enacted to increase IT efficiency and financial visibility across the DoD (Carroll & Coker, 2007). In addition, in 1995, the Government Accountability Office (GAO) officially designated the DoD's IT infrastructure as "high-risk" (GAO, 2005, April). These legislative actions heightened the urgency of the Army to address its specific IT shortcomings and security vulnerabilities and to ensure technological integrity throughout the logistical supply chain. Furthermore, the GAO, in a series of previously published reports, strongly suggested the DoD consider researching and investing in commercial information system technologies. It urged the Department to take advantage of industry-rich efforts in IT development and to allow the Army to focus on non-military solutions to persistent information management issues. It is clear these acts and the GAO's report were driving forces behind the Army's accelerated push for new approaches to solving data collection, processing and analysis efforts.

The Army decided a single, unified supply system would greatly alleviate historical SDS issues of process redundancy, manual interfacing, cycle-time variation and potential security shortfalls (Carroll & Coker, 2007). Acting on the invitation of government agencies to explore external IT solutions to internal inefficiencies, the Army began seeking such assistance. In 1997, at the direction of AMC, the Communications and Electronics Command (CECOM) formed a marketing research and information consolidation team to jumpstart the Army's initiatives to find commercial solutions for modernizing its business processes. This change is large-scale and has widespread impact on existing software applications and hardware equipment, system reengineering and design, DoD civilians and DoD contracting personnel at Army facilities across AMC (GAO, 1999, October). The transition plan called for functions carried out by

government employees to be transferred to contractors. This change prompted the Army to broaden its perspective on IT transformation; it began considering other legislative and policy provisions that may be potentially necessary to adequately address personnel issues (Carroll & Coker, 2007).

4. Single Army Logistics Enterprise (SALE) and Components

To gain information superiority and real-time visibility over logistical assets globally, as well as to refine IT practices eliminating various business-process inefficiencies, the Army embarked upon one of its most challenging and expensive IT implementation projects its history (Jones, 2008, June 25).The Single Army Logistics Enterprise (SALE), as its name suggest, represents a single unified supply system across the Army. It is a Structure Analysis Program (SAP)-based ERP solution that interfaces three separate systems. These systems enable Army logisticians to confidently manage the growing demands of maintaining a robust supply chain and distribution infrastructure. The IT systems that constitute SALE are the Logistics Modernization Program (LMP), the Global Combat Support System-Army (Field/Tactical) (GCSS-Army (F/T)), and the Global Combat Support System-Army, Product Lifecycle Management Plus (GCSS-Army (PLM+)). GCSS-Army (F/T) is the tactical component of the SALE architecture and supports all command and control functions related to combat through utilization of interactive information management. It consolidates 13 existing Army tactical systems into one IT system. GCSS-Army (PLM+) serves as the technical enabler—linking GCSS-Army (F/T) to the national-level LMP. GCSS-Army (PLM+) is a single logistics database that syncs the national and tactical levels of the Army supply system. Although GCSS-Army (F/T) and GCSS-Army (PLM+) are vital components of SALE, the LMP is the cornerstone of SALE.

The LMP stands at the center of the Army's efforts to unify the business processes that manage the supply chain. The program delivers a fully integrated, comprehensive suite of software and business processes that streamline the maintenance, repair and overhaul (MRO), planning, finance, acquisition and supply of weapon systems, spare parts, services and materiel to the warfighter. Prior to SALE, the LMP

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was formally known as the Wholesale Logistics Modernization Program and was considered an important component of the Army's Global Combat Support System (GAO, 1999, October). In December 1999, after more than two years of searching and thoroughly analyzing the possible benefits of various commercial IT management companies in the private sector, AMC awarded a ten-year/$680 million dollar contract to the Computer Sciences Corporation (CSC), the creator of the LMP, located in Falls Church, Virginia (allbusiness.com). It was specifically designed to eliminate non-value-added activities and develop processes that expedite sound decision-making. The contract specifically required the CSC to both create the ERP solution and manage the SDS (the existing system) during the transition phase. It also required the CSC to make the initial capital investment, as well. The CSC designed the LMP to: (1) reduce requisition response times, (2) improve the availability of supplies, (3) optimize the use of inventory, and (4) respond more quickly to changes in customer requirements and demands. In short, the objective of the LMP is to deliver real-time situational awareness and greatly enhance the decision-making ability of Army logisticians (military and civilian), as well as to reduce operational cost (GAO, 2002, October). It manages the Army's supply, maintenance, and transportation functions.

According to Major General Scott G. West (2008), in a briefing at ANAD, the LMP was mainly developed as a solution to support national and installation-level logistics. Furthermore, its objectives include improving readiness and weapon system support, adopting commercial "best practices," performing business process reengineering while leveraging IT, educating and training personnel, and finally, taking care of people. The LMP has ten critical functions ranging from the facilitation of depot maintenance to the management of wartime reserves and end-item procurement. The leadership structure of the LMP represents all levels of Army hierarchy—beginning with the Department of the Army Deputy Chief of Staff (G-4) and the commanding general of AMC. A program manager (PM) manages the LMP DoD personnel from the TACOM Level for all installations under TACOM Command. Figure 1 depicts the TACOM LCMC LMP Program Manager structure across its area of responsibility. The Program Manager (PM) represents a single face to HQ AMC and the Program Executive Office

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(PEO), Enterprise Information Systems (EIS). The mission of the PEO and EIS is to provide warfighters with information superiority through developing, acquiring, integrating, deploying and sustaining network-centric, knowledge-based IT and to leverage these capabilities through commercial ERP practices (PEO EIS Catalog, 2005). The PM is essentially responsible for all activities associated with LMP deployment throughout LCMC, and for providing direction and support to all business centers, depots/arsenals, PEO/PM's and R&D centers accordingly.
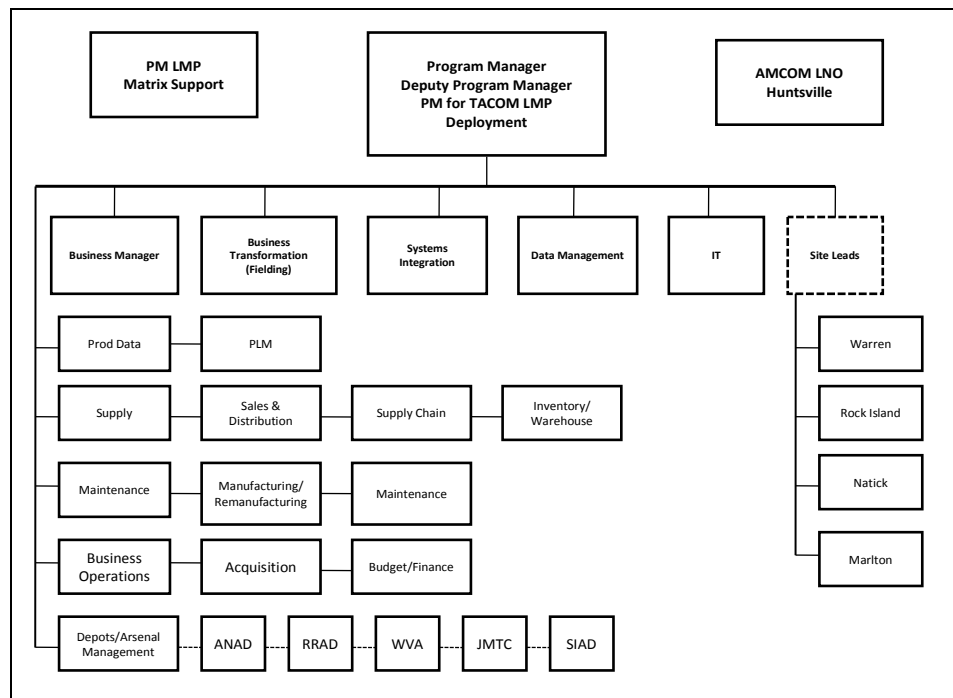
Figure 1.   LCMC Integration Approach (From: West, 2008, p.8)

TACOM LCMC's LMP encompasses a complete cross-section of ammunition and maintenance depots—with an assortment of responsibilities within the Army's larger supply chain.   The LMP will have significant impact on each entity within the organization. It is a multi-echelon business architecture based on vertical coordination. It is through this integrated approach that the Army intends to synergize its array of complex business processes.

5. AMC and the CSC

Early in the contractual relationship, AMC and the CSC decided to implement the LMP in phases (deployments), across AMC's various depots and arsenals projection (E. Griguhn, personnel communications, June 5, 2008). Since the CSC's first deployment of the LMP at Tobyhanna Army Depot, Pennsylvania, in July 2003, the LMP has been a principal participant in fulfilling warfighter requirements, in at least some measure, on a daily basis. When fully operational across all levels of AMC, the LMP will have the ability to manage $4.5 billion worth of inventory, process transactions with as many as 50,000 vendors, integrate more than 80 DoD systems and support more than 17,000 professional logisticians (Carroll & Coker, 2007). In keeping with the Army G-4 objectives, the LMP will ultimately connect all Army logisticians, modernize theater distribution and improve force reception.

No matter the degree of IT advancement, human beings are ultimately at the heart any ERP solution. Human beings and the way IT change affects them individually and collectively are the focus of this thesis project. The history of the SDS and the LMP provided in this chapter serves as a foundation for understanding the IT change environment, specifically at ANAD. The Depot is part of the Phase III LMP deployment cycle due to occur in December 2009 (Griguhn, 2008, June 25). Although the LMP was awarded a SAP Customer Competency Center certification, many challenges remain. How depot-level personnel interface with the LMP is of central importance. Over the years, ANAD personnel—as their counterparts at other depots—have acclimated to the SDS. Their daily activities, business routines, IT habits and skill sets have centered on the SDS from its conception. In a very real sense, the SDS is their IT livelihood. It is the system under which they conduct their business processes with remarkable efficiency in spite of SDS inefficiencies. ANAD personnel have developed a comprehensive understanding of the SDS and the manual workarounds necessary to effectively manage shortfalls in the system. It is the Depot's backbone of information, where workforce members receive their workloads, negotiate, plan, execute, and measure them. It is also the system under which ANAD personnel are paid; it affects every directorate within the command and beyond.

As stated earlier, AMC and the CSC agreed upon a phased implementation of the LMP across its facilities. This phased implementation strategy currently poses an interesting challenge. One aspect of the contractual relationship between AMC and the CSC concerns proprietary information and protection of such information throughout the implementation phase. Under the current implementation plan, AMC does not afford non-deployed depots access to the LMP training aides and manuals. Additionally, the transition from the SDS to the LMP at ANAD will be a binary transition. SDS will shut down and the LMP will starts up without any integration or merging of the two independent systems during the transition period. The problem with this new transformation will be that ANAD personnel will not be afforded an acclimation period for training and familiarization. Furthermore, AMC and the CSC have a service contract in which a percentage of the CSC's performance bonuses are based on maintaining cost savings throughout the process; although phased implementation plan provides such savings, in this instance it could be off-set by the increase in time and staff required to train personnel who are not sufficiently acclimated to the new system.

Given these significant limitations in the implementation plan of the LMP, we focused our research on two central questions. How do organizational behavior and attitude affect ANAD's readiness for major IT transformation? How can the results from this study best help ANAD strengthen its readiness for IT transformation? We intend to answer these two important questions with prior research on organizational change, as well as administration and analysis of an award-winning survey. We will also make recommendations based on the survey instrument.

II. LITERATURE REVIEW

A. INTRODUCTION

1. History of Readiness for Change Literature

An overwhelming amount of research has been conducted in the field of organizational change investigating the variables affecting readiness for change and the specific factors contributing to its impact on the social climate of an organization. Volumes of research have been conducted and analyzed in the 50 years since Jacobson (1957) first published literature on the subject of readiness as a unique construct. Readiness for change encompasses not only the broadest concepts of organizational transition and its various antecedents, but also different theory-based explanations that seek to define the enterprise change process through phases, frameworks and numerous other constructs. Organizations are essentially social systems with all the complexities and variations typical found in human personalities (Harvard Business Essentials, 2003). Therefore, it is not uncommon that people generally form opinions about their organizational environment through personal observations, experiences and emotions.

Historically, researchers have used both theory and empirical-based analysis to explain change phenomenon in this context. The purpose of this literature review is to provide a foundational basis for the detailed study of Anniston Army Depot's (ANAD) scheduled large-scale information technology (IT) transition. This literature review will not only serve as a foundation for understanding ANAD's collective readiness as an organization for significant IT change, but it will also provide a context for gauging individual change-readiness factors.

Our in-depth analysis of ANAD's readiness for major IT change is based on the research developments of Holt and colleagues (2007) on readiness for organizational change. In their research, they define readiness for change as a comprehensive attitude that is influenced simultaneously by the content (i.e., what is being changed), the process (i.e., how the change is being implemented), the context (i.e., the circumstances under which the change is occurring), and the individual (i.e., the characteristics of those being

asked to change). Based on this definition, Holt and colleagues (2007) developed a systematic scale to evaluate the readiness of an organization for significant change. In all, nearly 1,000 members from two independent organizations—in both the public and private sectors—participated in a quantitative measurement of readiness for change at the individual level. The results of their analysis concluded that readiness for change is multifaceted and that several factors influence employee behavior toward change. They suggest employees' beliefs about readiness for change can be measured based on: (1) their belief in their capability to implement the proposed change (i.e., change-specific efficacy); (2) their determination on the appropriateness of the proposed change for the organization (i.e., appropriateness); (3) their support of the leadership implementing the change initiative (i.e., management support); and finally, (4) their belief that the proposed change is beneficial to organizational members (i.e., personal valence).

The authors make it clear that employee's readiness for change is undoubtedly a pivotal factor in their preliminary support for major change initiatives. Holt and colleagues (2007) cite Armenakis and colleagues (1993) and their research, as the latter assert that very strong academic and practical foundations exist for using a theoretical framework to understand the preparedness of an organization for change. The framework synthesizes several theories across multiple disciplines to give the leaders responsible for implementing change initiatives a fundamental appreciation of the significance of the change phenomenon. The survey instrument we used to measure readiness of change at the two organizations was quantitatively administered to extend the reliability and validity of the results beyond qualitative methods—as such qualitative methods rely on personal interviews that provide rich, change-specific data in particular cases, but from which it is difficult to draw long-standing conclusions about readiness for change across the organization. Utilizing Holt's researched and systematically developed scale, we developed a valid abridged version of the survey instrument for evaluating the change readiness of the ANAD social system.

2.   Research Model

The literature selected for review in this chapter is based on the model developed in Figure 2. Controlling for Individual Attributes (i.e., age, profession, education level, length of service), the figure essentially suggests attitudinal outcomes variables (i.e., job satisfaction, turnover intention, affective commitment) are based on Readiness for change factors (i.e., appropriateness, management support, efficacy, valence); these factors are, in turn, based on contextual variables (i.e., communication climate, perceptions of top management, perceptions of organization change climate, trust in top management, perceptions of management ability, perceptions of co-workers).
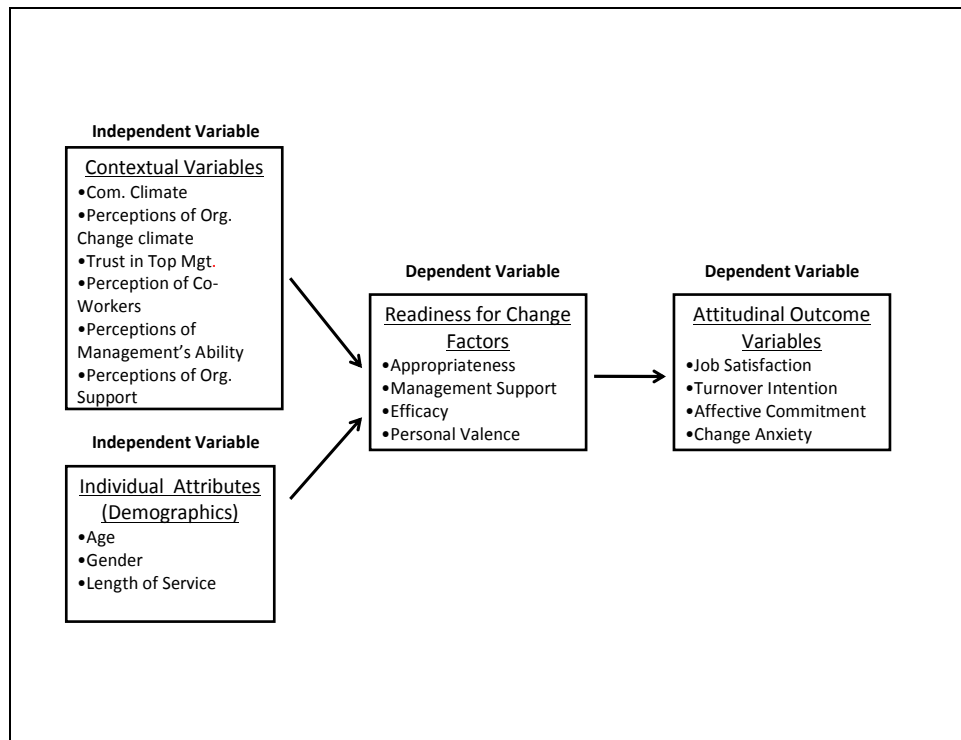
Figure 2.   Contextual Variables

Since we identify contextual variables as independent variables ultimately shaping attitudinal outcomes via readiness for change factors, most of the literature examined in this chapter focuses on providing context to contextual variables. As explained in later chapters, although they provide important demographic information,

we control for individual attributes in an effort to focus our analysis on the remaining factors affecting members' perceptions of change. We intend to closely examine prior research on contextual variables, given these ultimately explain attitudinal outcomes as they relate to employees' behavior toward change efforts within the organization. Contextual variables serve as independent variables in our model and describe the circumstances in which readiness for change occurs. They essentially provide the setting for understanding how personnel perceive change in their respective work environments. Eby and colleagues (2000) state that the degree to which organizational policies and practices are or are not supportive of the initiative are central to comprehending employee perceived readiness for change.

According to Holt and colleagues (2007), contextual variables are attributes that describe the environment in which the initiative is implemented. In essence, these variables explain organizational climate and, thus, describe the setting in which readiness for change factors develop. These researchers note that this perspective usually consists of the conditions and environment within which employees function. Organizational climate is undoubtedly a critical element in understanding how contextual variables relate to members' change readiness.

Over the years, there has been an enormous amount of substantive research on organization climate and its relationship to individuals within the enterprise. Mat Zin (1994) noted that organizational climate is of the utmost importance; it is identified as a critical link between the members of an organization and the organization itself. Ashforth's (1985) extensive research on this topic purports that climate is reflective of interaction within the organization, suggesting that it is a joint property of both the organization and the individual. Mat Zin and Ashforth both note the degree to which enterprise policies and routing practices support employees' daily job functions and objectives is instrumental in instigating any initiative and establishing an appropriate climate for change. An organization's willingness to provide its members flexibility in such actions is a measure of how much trust leadership has in their employees to competently handle the transition. They summarize their discussion on the importance of contextual variables in developing perceptions with three hypotheses: they assert that

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flexible policies and procedures, logistical support, and trust in management are all attributes that will positively affect members' abilities to receive and appropriately respond to changes in their environments.

This view is further substantiated through the in-depth analysis of a number of other important researchers on this topic. Falcione and colleagues (1987), Kozlowski and Doherty (1989), Poole (1985) and Schneider (1983a; 1983b) all essentially state that the link between the individual and the organization is significant because it reflects members' general beliefs and attitudes about change. Therefore, if such generalized beliefs are favorable, then members' commitment to the organization and its change initiatives will be equally receptive and vice versa. Mat Zin (1994) further states that organizational climate is a relatively enduring quality that influences behavior. He also notes that Tagiuri (1988) views climate as a property of the organization itself. It is characterized and interpreted through the eyes of its membership, and thereby affects attitudes and motivations in the workplace. This view, however, consistent with Pritchard and Karasick (1993), suggests that organizational members are primarily responsible for development of the workplace atmosphere through their collective interpretations and behaviors towards enterprise change initiatives.

B. INDEPENDENT AND DEPENDENT VARIABLES

Communication Climate is one of several important Contextual Variables central to understanding the change readiness of employees experiencing major transformations in their work environments. Researchers in the field of communication have varying, yet overlapping, definitions of communication climate and the factors and variables that constitute its relevance. Although some researchers conclude communication climate is distinct from organizational climate in the sense that it focuses exclusively on communication phenomena (i.e., receptivity of management to employees or the accuracy if information disseminated to subordinates), Mat Zin (1994) concludes that communication is connected to organizational climate as a medium through which organizational objectives are accomplished. In fact, he asserts that Welsch and LaVan's

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(1981) research directly links organizational climate to organizational commitment using five predictors—categorized as communication, decision-making, leadership, motivation, and goal-setting.

In their detailed analysis of individual and collective perceptions of employees within the organization and the factors impacting those perceptions, Eby and colleagues (2000) make the case that a very important relationship exists between employees' perceptions of major change initiatives within an organization and the organization's readiness to undergo significant change. Using Armenakis' and colleagues (1993) definition of perception as "the cognitive precursor to the behaviors of either resistance to, or support for, a change effort," the authors reiterate the prior research supporting the existence of a well-defined relationship between perceptions, behavior and change. Eby and colleagues (2000) also identified employees' perception of organizational readiness for change as one important factor in understanding sources of resistance to large-scale change. An understanding of the importance of individual employee attitudes and preferences is critical if researchers are to grasp how perceptions will impact enterprise transformation goals. The authors of this study (2000) clearly state that employee perceptions have the ability to either positively or negatively impact important pending change efforts within the organization in terms of morale, productivity and organization personnel turnover rates. Consistent with prior research on organizational readiness for change, they contend that momentum, excitement and early buy-in are critical ingredients in the implementation process of any major transformation effort.

Although Eby and colleagues (2000) recognize and appreciate the in-depth historical research on change and specifically note its intuitive appeal, they point out that many historical models often focus on theory-based models of readiness for change rather than emphasizing empirical research methods derived from tangible experience or experimental procedures. They note that the latter gives their research the ability to focus on specific variables that may be related to how employees perceive readiness; such variables could fundamentally alter their work environments and organizational structures. Ultimately, the purpose of the authors' study is to build upon Armenakis' prior research through emphasizing the importance of particular variables as they relate to

significant change, thereby giving their research both empirical and theoretical relevance (Eby et al., 2000). In a practical sense, their hybrid method of using both research advocates and implementers of change to analyze core areas of concern and utilize empirical research methods to examine antecedents to help researchers gain a more substantive understanding of the variables directly impacting transition efforts. To validate their use of this empirical research method, the authors examined two different divisions of an organization undergoing large-scale change.

The authors recognize the significance of Lewin's (1951) foundational research in the field of organizational change as they emphasize the concept of unfreezing—the practice of altering or disrupting members' traditional beliefs and attitudes about change in an organization, thereby providing an avenue for members to see the change as both necessary and likely to succeed. However, Eby And colleagues (2000) also note that this basic concept, similar to Armenakis, suggests that employees have pre-established or ready-made notions on the extent of an organization's readiness to undergo dramatic change. Eby and colleagues (2000) feel that prior research on enterprise climate indicates such notions would likely evolve as individuals acquire a history, thus shaping specific variables defining their experiences. Therefore, the authors of this literature argue that readiness for change, no matter the degree, is defined by individual perceptions of its members and can only be understood through this lens. In contrast with traditional research on "cognitive precursors"—as Armenakis defined them and which Lewin (1951) and Spreitzer's (1996) research use as a foundation—Eby and colleagues (2000) theorize that organizational readiness for change reflects a collection of individuals' unique interpretation of their workplace reality and such perceptions are rooted in these unique experiences (2000). The authors emphasize Spreitzer's (1996) notion that individuals continuously interact with their work environments and are, therefore, directly influenced by the reality of their personal experiences—as opposed to an objective reality. Based on this supporting information, Eby and colleagues (2000) conclude that individuals develop foundational perceptions out of their personal realities and apply them to interpret organizational change. These perceptions of reality are personal and vary from one

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employee to another within the same enterprise. Eby and colleagues (2000) suggest that personal experiences define perceptions. It is through this formula that employees make sense of the change process.

When examining specific variables that may affect an organization's ability to carry out massive change in an enterprise, the authors suggest that a very important relationship exists between the resources available to implement change and the members responsible for utilizing the elements of the change initiative; these elements serve as a means of continuing and heightening administrative and operational productivity. The capability of an organization to actually acquire the necessary resources to produce change—as well as its members' belief that the organization can in fact produce those resources—is indicative of its ability to successfully sell transformation to desired members (Eby et al., 2000). The elements of change must be manifested and visible in the organization to be credible among its members in words, symbols and deeds. The authors clearly state that if an organization cannot muster sufficient credibility among members through these methods, resistance to change is certain, and it will be difficult to overcome in the preliminary stages of any transition plan. Additionally, they hypothesize that if employees conclude their work environment is highly participatory and have significant trust in the skills of their peers, and then they'll likely be much more receptive of pending change efforts.

Eby and colleagues (2000) essentially classify the variables affecting members' perceptions of change in the context of three traditional categories: individual attributes and preferences, work groups and job attitudes, and contextual variables. It is within these defined categories, they believe, that individual perceptions are shaped in regards to change. As noted earlier, personal experience is a factor that shapes an individual's perceptions of enterprise change readiness. Therefore, a leader's ability to establish a sufficient track record on a personal level with members of his or her team or work group, in terms of shared priorities and goals, is very important. If the leaders of the enterprise (i.e., supervisors, managers and department heads, etc.) make a conscious effort to build a lasting work relationship with its members, its members are more likely to accept an organization's desired plans to reshape their environment—even if they are

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not fully supportive of the measure. The authors also highlight the importance of self-efficacy in change. Members' perceptions of how much the organization cares about their welfare and concerns is pivotal to the effort if leaders wish to achieve early-buying and build sustained momentum. Eisenberger and colleagues (1986) support the findings of Eby's research team. They assert, "Perceived support refers to an employee's perception that the organization cares for his or her well being and is supportive of his or her concerns" (Eisenberger et al., 1986). Reciprocity is an extremely important component of readiness for change. The authors acknowledge it is much easier to motivate personnel to pursue a new endeavor when they feel there's a high level of appreciation cross the organization for their commitment, dedication and hard work. Their research indicates self-efficacy is an individual attribute that undoubtedly influences how an employee reacts to impending change.

When analyzing the significance of work group and job attitudes, the authors state that research indicates that members' reactions to their jobs and work groups are critical ingredients that shape the social climate with an enterprise. Important interpersonal variables—such as job challenge and autonomy, work-group cooperation, workplace friendliness and support—form the foundation for how they perceive the change-readiness of both themselves and their fellow co-workers. This is even more critical to creators of change in business atmospheres, as transition in business requires a high level of interpersonal involvement to successfully complete mission objectives. Regardless of the sector, Eby and colleagues (2007) stress that leaders must remain attuned to such variables at all times if they desire to implement major change and reorganization to the traditional structure of any enterprise. They conclude their research on work groups and job attitude attributes by stating three hypotheses that potentially can result in members having a positive view of their readiness based on interpersonal characteristics. Trust in peers, skill variety, and participation at work is all workplace attributes that can favorably impact member perceptions of change as they face uncertainty.

Similar to the systematic development of a scale found in Holt and colleagues (2007), Lewin's (1951) concept of unfreezing, moving, and refreezing as a foundation, explains the necessity of identifying the necessary variables that impact individual

change-readiness and of developing a reliable instrument capable of gauging these variables in the enterprise. This foundational concept will enable change agents to focus on particular areas of interest to strengthen their organization's readiness and willingness to embrace change.

In order to provide a conceptual framework for understanding readiness for change, Holt and colleagues (2007) utilize well-established comprehensive measurement models which focus on the relationship between content, process, context and individual attributes. These attributes coexist in each individual and act simultaneously—influencing a member's belief system, forming the basis of his or her general attitude regarding change, and eventually directly affecting his or her behavior towards such initiatives. Collectively, Holt's study states these four variables are the foundation of resistance or adoptive behaviors (Holt et al., 2007). Content, change process variable, context and individual characteristics are the four variables. Content, reflects degree and extent of what's being changed. The change process variable, concentrates on the steps necessary to implement the initiative. Context, looks at the setting and circumstances under which the change is to occur. Individual characteristics, concentrate on the specific characteristics of those being asked to change. Holt and colleagues (2007) make it clear that historical research suggests that collectively, these four attributes serve as cognitive indicators of how individual members of an organization will assess their change-readiness—both as individuals and as an enterprise. The authors then advance the research to develop an organizationally germane instrument that uniquely addresses the concerns of managers, implementation consultants and researchers.

Holt and colleagues (2007) emphasize that individuals are ultimately responsible for implementing and successfully completing any change effort, no matter the degree. Any action taking place within an existing structure is an amalgamation of individual member actions and reactions to the phenomenon of change; thus, an organization will reject or accept change within the context of its collective membership. Originally, these authors conclude that self-efficacy, discrepancy, personal valence, organization valence and management support were the five most influential readiness factors that determined how members will personally respond to change.

Holt's team concludes there are several important specific contributions their research makes to the field of organization change readiness. First, it was systematically developed and provides a detailed pathway for leaders to assess the readiness of their members for significant transformation. Second, it establishes a basic framework with which to contextualize other research and academic models previously developed. Most importantly, its relevance across a broad spectrum of business fields and organization types is extremely beneficial. However, they do note one significant drawback. Even though numerous subjects compiled in the study were heterogeneous in terms of providing a real cross-section of people from different fields, the study only examined two organizations (Holt et al., 2007). They believe this indicates their instrument is limited in its relevance and validity in some sense. Nevertheless, it serves as a useful method of assessing organization change-readiness through the eyes of individual members most affected in the process, and it gives leaders an opportunity to formulate and implement a strategy to overcome challenges in the preliminary stages of any effective transformation effort (Holt et al., 2007).

C.   FORCE FIELD ANALYSIS

Lewin (1951) provided foundational research in the field of organizational change, and it largely serves as the basis of much of today's explanation of how significant transition affects its members and the enterprise as a whole. More than a half-century ago, he developed the Force Field Analysis Model to explain the internal dynamics of the change process in organizations. According to Lewin, organizational systems are a dynamic balance verses a static pattern in which two forces compete to determine the destiny of change. The model is essentially composed of two opposing and continuously competing internal forces. The model depicts one side as driving forces and the other as restraining forces within the context of moving from the current condition to the desired condition. Driving forces move the organization towards a new state of affairs, while restraining forces seek to maintain the status quo. Both forces are based on singular habits, customs, and attitudes of individuals. The Force Field Analysis remains one of the most widely used models to explain the internal fundamentals of organizational change in business organizations and major corporations.

These forces are the heart of any organizational change effort because they are responsible for pushing new ideas and concepts forward to achieve intended objectives in a new reality. They possess the critical function of both initiating momentum for change at the core level of the enterprise and maintaining it to the conclusion of the change process. These forces can come in a variety of forms—such as improved productivity in work groups, pressure from supervisors, visual theme enforcement or incentive pay. McShane and colleagues (2007) explain that internal driving forces are often developed as a result of external forces—affecting the environment in which the organizations exist. External forces (such as globalization, virtual work, and an ever-changing workforce) are some examples of outside pressures. However, these researchers note that some internal driving forces are difficult to apply if they lack the external environmental factors necessary to legitimize actions. For example, they note that organizations experiencing peak performance in their respective industries often have a far more difficult task to press the need for change than an enterprise experiencing sub-par or lagging performance.

An organization's leadership style can also have significant impact on how its social system responds to significant change. According to Bolman and Deal (2003), leaders of organizations communicate and implement their decision-making process with their enterprise in one of two ways—vertical or lateral coordination. Vertical coordination is an authoritarian style of communication in which the upper echelons of an organization control the work of subordinates through authority, rules and policies, and planning and control systems. This method utilizes formal authority in the form of executives, managers, and supervisors to communicate and align personnel with organizational goals. Conflict resolution, problem solving, performance evaluation, output mechanisms, sanctions and the reward system are all determined at the highest levels of the enterprise. Vertical coordination is very hierarchical in nature, and authority is easily recognizable in its structure. According to Dornbusch & Scott (1975), this hierarchy can pose an interesting challenge in terms of obtaining buy-in from employees.

They suggest that when an organization is implementing major initiatives or directives that require high levels of commitment, that transition works best when subordinate leaders are empowered, and the decision-making process in shared at lower levels.

Rules and policies ensure standardization and establish criteria for employees. Perrow (1986) states that such rules and policies reduce individualism or "particularism" and ensure uniformity in action and process management. Bolman and Deal (2003) further note that this form of coordination can have a negative effect if an organization encounters adverse circumstance. Planning and control systems are the methods through which organizational leaders gauge performance and establish acceptable outcomes without specificity. Bolman and Deal (2003) state that rigid control systems have limited value in circumstances in which the outcome is uncertain or unpredictable. Action planning defines decision-making methodology and time frame execution. Such planning works best in the service industry. This is mainly because the methodology is easily determined in this environment. This may be difficult to determine if the objectives of the job have been accomplished prior to action planning (Bolman & Deal, 2003).

Trust is one of the most, if not the defining element, of contextual variables. Management literature widely acknowledges the importance of trust in the workplace (Mayer, Davis, & Schoorman, 1995; Cordona & Ebola, 2003). Cordona and Ebola's (2003) study focuses on the subordinates' trust in management—specifically employees' perceptions of the management's abilities, communication climate, perceptions of the organization's change climate, perceived organizational support, and perceptions of co-workers, as each of these involves some level of trust. These researchers assert trust is a common factor crossing all boundaries. They focused on managerial trustworthy behavior (MTB) as an antecedent of subordinates' trust in their leader (STL), and they analyze the reciprocity between STL and employees' perceptions of management's trust in them (LTS). Their instrument is based on the research of Whitener, Brodt, Korsgaard, and Werner (1998), which defines trust through categories of behavioral consistency, behavioral integrity, sharing and delegation of control, communication, and demonstration of concern. Cordona and Ebola's (2003) findings suggest there is a strong relationship between MTB, STL and LTS. This emphasizes the fact that trust is both

interpersonal (i.e., interactions and occurrences between individuals within the organization) and interdepartmental (interactions and occurrences between different departments within an organization). This analysis underscores the important role of trust as a determinative factor in attitudinal outcomes.

In examining the role of IT in the change process, Wailgum (2003) wrote extensively on the relationship between Enterprise Resource Planning ERP and its effect on organizational change. Although IT has the potential to transform business processes of organizations tremendously in terms of improved cycle-times, order-processing times, uniformity, commonality and administrative actions, he notes it requires considerable resource investments upfront; such investments are frequently underestimated and could place significant stress on employees. According to Wailgum (2003), training is almost unanimously underemphasized and underfunded because implementers will more than likely be required to learn new sets of processes above and beyond a few software interfaces. Although ERP is billed as a single software solution, he argues that software add-ons (customization) are a reality for most ERP implementation plans because of the uniqueness of business requirements within a single organization. Wailgum (2003) also notes that integration, testing and data migration (conversion) are all challenging elements of ERP implementation that must occur in the midst of ANAD maintaining mission and stated objectives to customers. These risks associated with ERP endeavors should not be underestimated.

D.   PURPOSE AND HYPOTHESES

This professional project seeks to answer two important questions central to understanding and contextualizing the readiness of ANAD's social system for significant IT change originally proposed in our project proposal. First, how do organizational behavior and attitudes affect ANAD's readiness for major IT transformation? Second, how can the results from this study best help ANAD strengthen its readiness for IT transformation? Specifically, we want to examine the relationship (if any) between contextual variables and readiness for change factors as established and defined in Holt's team's (2007) study. Employee perceptions of an organization's communication climate,

top management, organization change climate and trust in management are contextual variables that provide a foundational context—a context in which researchers and leadership can understand how employees view significant change initiatives within the enterprise. In this sense, contextual variables are independent variables in which employees individually form their perceptions based on their particular experiences and interactions with organizational leadership. The readiness for change factors serve as the dependent variables in this relationship. They are based on employee perceptions of the leadership element. We seek, then, to examine the relationship (if any) between readiness for change factors and attitudinal outcome variables. These variables provide a broad understanding of how ANAD employees view and behave towards pending change initiatives.

We form two general hypotheses about the relationships between contextual variables, readiness for change factors and attitudinal outcome variables. We propose there is a positive relationship between contextual variables and readiness for change factors. Furthermore, we propose there is a positive relationship between Readiness for change factors and attitudinal outcome variables. In forming our hypotheses, we controlled for individual attributes such as age, years of experience at ANAD, education level and job description and position. Although these particular attributes are independent elements of the survey instrument that provide detailed insight into how employees feel about readiness for change, we seek to isolate them and strictly focus on one independent variable (contextual variables) as they relate to readiness for change and attitudinal outcomes.

1.   Contextual Variables and Readiness for Change Hypotheses

In general we believe Contextual Variables are positively related to readiness for change factors.

Hypothesis 1a

Employees' perceptions of organizational communication climate are positively related to appropriateness

We believe that if employees feel they consistently receive relevant information in a timely fashion, they are more likely to perceive management's change initiatives as legitimate and appropriate for the organization.

Hypothesis 1b

Employees' perceptions of top management's ability are positively related to management support

We believe that if employees feel organizational managers possess the necessary skills and capabilities to successfully complete mission objectives and feel that management values their contributions and well-being, they are more likely to have a positive perception of management support.

Hypothesis 1c

Employees' trust in top management is positively related to appropriateness

We believe that if employees have considerable trust in their leadership and are willing to allow organizational leaders to control issues important to them, the more likely they are to view the change initiative as legitimate and appropriate.

Hypothesis 1d

Employees' perceptions of organizational support are positively related to personal valence

We believe that if employees feel that the organization values their service, contributions and cares about them, the more likely they are more likely to believe they will benefit from the prospective change.

Hypothesis 1e

Employees' perceptions of organizational communication climate and perceptions of their co-workers are positively related to efficacy

If employees feel they consistently receive relevant information in a timely fashion and have confidence in their co-workers' capabilities, they are more likely to feel

they possess the skills and ability to execute the tasks and activities that are associated with implementation of the prospective change.

2. Readiness for Change and Attitudinal Outcome Hypotheses

In general we believe Readiness for Change Factors are positively related to Attitudinal Outcomes.

Hypothesis 2a

Employee efficacy is positively related to job satisfaction

If employees feel that he or she has the requisite skills and capabilities to execute the assigned tasks and activities associated with the implementation of prospective change, the more likely they will have high job satisfaction.

Hypothesis 2b

An inverse relationship exist between management support and change anxiety

If employees feel that the organization's leadership and management are committed to and support implementation of prospective change, they will be less concerned or anxious about the impending change.

Hypothesis 2c

We hypothesize that an inverse relationship exist between management support and turnover intentions

We believe if employees feel that the organization's leadership and management are committed to and support implementation of prospective change, they are less likely to have intentions to leave the organization.

Hypothesis 2d

We hypothesize that an inverse relationship exist between personal valence and change anxiety

We believe if employees feel that he or she will benefit from the change, they are less likely to develop concerns or become anxious about the impending change.

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The literature consolidated in this review provides substance and context to the relationship between Contextual Variables, Readiness for Change Factors and Attitudinal Outcomes. Although the literature is not comprehensive in its analysis of every element of the model, it does, however, assist the researchers in comprehending the effects of an organization's change-readiness on major IT change occurring within it. Most importantly, it will assist us in our analysis of the change-readiness of the ANAD social system.

III.   RESEARCH METHODOLOGY

A.   PURPOSE

This thesis project seeks to answer two very important questions in determining the readiness of the ANAD social system for significant IT change. How do organizational behavior and attitudes affect ANAD's readiness for major IT transformation? How can the results from this study best help ANAD strengthen its readiness for IT transformation? In order to conduct a detailed analysis of the current state of the social climate and to provide substantive recommendations moving forward, we must choose the correct research model and use appropriate instruments to gather the necessary data. We seek to examine the serial relationship, if any, between contextual variables, readiness for change factors and attitudinal outcome variables. To make this determination, we administered an approved, modified version of an award-winning quantitative survey instrument—originally implemented at the United States Air Force Materiel Systems Group (MSG)—to a sample of employees from a cross-section of directorates at ANAD. The Holt's instrument specifically focused on readiness for organizational change and the factors affecting such change. More than 900 organizational members from both the public and private sector were surveyed; the questionnaire was distributed in two separate organizations undergoing large-scale change. The data gathered from the sample group was used to test the relationship between the independent variable (contextual variables), and the two dependent variables (readiness for change factors and attitudinal outcome variables). The instrument can be classified as a correlation relational study because four different categories of data were compiled for the sample participants.

B.   TARGET POPULATION

Our target population for this study consists of a group ANAD data management experts and supervisors from all departments. The employees selected for our research conformed to specific criteria and would serve as the basis for the generalization of any results published from the survey instrument. The participants were intimately associated

with the Depot's daily SDS business processing functions and were very well versed in the potential social and technical challenges inherent in the transformation process. They would be deeply involved in the implementation phase of the LMP. In preparation for the implementation of the LMP, the leadership element formally created an LMP office to manage ANAD's transition and acclimation.

The LMP Coordinator heads the office and coordinates all LMP measures between the Tank-automotive and Armament Command (TACOM) and ANAD. The office is of particular importance because it serves as the social and technical conduit between the SDS and the LMP. It is composed of senior, experienced IT management experts. After the Human Resources Department of ANAD conducted a survey and gained a preliminary observation of social readiness challenges from depots previously deployed and actively undergoing transformation, the depot leadership expressed an interest in obtaining more detailed information on the readiness of the ANAD social system for large-scale IT change. The command element believed a substantive analysis of the ANAD culture would aide the depot leaders in facilitating a smoother transition to the LMP and would reduce potential anxiety among employees about the pending change. Furthermore, it was interested in obtaining quantifiable results that could be measured to gauge employee development over time and could aide the Depot leadership in its own organizational decision-making process.

Upon contacting the manager of the ANAD LMP Office at the direction of the commander, we received a preliminary brief from the LMP Coordinator. We were promptly introduced to two resident SDS experts readily familiar with ANAD's limited first-hand LMP experience. They provided a brief overview of the SDS and the historic social climate regarding the pending implementation of the LMP. At the conclusion of the initial meeting, the coordinator provided us a comprehensive list of specific personnel by name, title, department, and corresponding e-mail addresses. This diverse sample population varied in experience, education level, area of expertise and leadership styles. It is important to note that ANAD personnel have maintained a very high level of operational proficiency in the increasingly robust logistical environment. All personnel

involved in this survey are responsible for such proficiency through their use of the SDS; no particularly subpar performance on the part of any of the Depot's several directorates prompted the conduct of this survey.

C.   SURVEY APPROVAL PROCESS

We worked closely and extensively with the LMP Coordinator in survey development and administration to the targeted ANAD population throughout this project. We utilized information technology to administer the survey to participants. As indicated earlier, the LMP Coordinator provided a list of e-mail addresses of potential participants for the specific purpose of electronically notifying personnel of the nature and context of the survey. Taking this a step further, under the leadership of the principal investigator and in close consultation with the LMP Coordinator, we decided to distribute the survey instrument electronically for several reasons. We believed this method of administration would be most convenient in terms of data distribution, collection and analysis. Furthermore, we believed this method would be least intrusive in terms of minimizing work interference on the part of co-investigators and would provide participants considerable flexibility. Prior to administering the survey, we submitted an approved letter of consent from the Naval Postgraduate School (NPS) Institutional Review Board (IRB), as required when conducting research on human subjects. This consent form was in integral part of the electronic survey, and each participant was required to either approve or disapprove the form immediately prior to completing the instrument. The primary researcher maintained contact with the LMP Coordinator at all times. Additionally, as a precursor and at the advisement of the LMP Coordinator, we submitted an informative e-mail to all potential subjects prior to survey administration informing them of the survey, its purpose, scope and how it could be used to facilitate the ANAD leadership element's (the Depot commander and principal directorates) efforts to provide a smooth transition to the LMP while maintaining seamless operational productivity to the warfighter.

ANAD took several internal structural steps to prepare for significant IT change. These included personnel movement, office reconstruction, and, most importantly, the establishment of the LMP Office. However, the leadership's inability to control external decisions with respect to access to propriety information, status in the LMP deployment cycle and, ultimately, access to LMP training aides and other vital resources from the CSC and ANAD/TACOM, have posed notable challenges in acclimating the ANAD social system to the pending change. Without question, ANAD was extremely aggressive in taking the necessary and prudent steps to ensure its personnel are as prepared as possible for the pending transformation. To date, the LMP Office has actively exploited the limited resources available, such as ERP language training aides that provide a basic foundation for understanding the LMP lexicon. It has also benefited from the experience of social systems at depots currently instigating the LMP, such as Tobyhanna and CECOM. These installations are able to informally communicate their experiences with the LMP and its implementation, thereby providing a tangible source of information regarding the transition. To many, these vicarious experiences serve as a bellwether, allowing ANAD personnel to make early determinations and conclusions prior to execution.

D.   SURVEY INSTRUMENT

The integrity of this research was of utmost concern to participants and was strictly maintained at all times. Potential participants were readily informed that if they participated, their confidentially would be used to categorized survey results but would not be individually released. The survey administration instrument, SurveyMonkey, was a most useful tool and served its purpose on several levels. This instrument allowed the individual names and e-mail addresses of the targeted population to enter into the program; it returned individual and anonymous responses corresponding to the exact number of people entered into the database of SurveyMonkey. It also proved quite user-friendly for both survey administrators and participants. The principal investigator and co-investigators were able to easily enter, edit and modify survey questions and to format the instrument to suit the particular needs of the target population. It also allowed researchers to randomize answer choices—thereby eliminating bias. It relieved

researchers of the responsibility of distributing hardcopies of the surveys—thus reducing the need to manually track responses and acquire additional assistance and resources to do so. Convenience was another factor aiding in the successful administration of the readiness for change survey. The established two-week window for completion of the survey, combined with the ability for the respondents to fill out the survey at their leisure (i.e., work, home, on the road), enabled the researchers to obtain timely responses. As a means of follow-up and to heighten the response rate, we periodically sent out reminders to participants encouraging them to complete the survey. Based on the response rate, all directorates represented in the survey maintain a solid representation in the logistics field and were eager to provide quality input.

The result from the survey conducted by Holt and colleagues (2007) on Organizational Readiness for Change indicates that readiness for change is multi-dimensional and involves several important measurement factors. These measurement factors are change appropriateness, self-efficacy, personal valence and leadership support. Appropriateness refers to the extent to which an employee feels there are or not legitimate reasons to support the pending change initiatives. Self-efficacy refers to the extent to which that employee feels he or she has or doesn't have the necessary skills to adapt to the new change environment. Personal valence refers to the extent the employee feels he or she will personally and organizationally benefit from the implementation of the initiative. Finally, leadership support refers to the extent to which an employee feels the organization's leadership and management are committed to and either support or don't support implementation of the perspective change. Adopting this view, we seek to measure ANAD's readiness for change as a social system utilizing three approved scales from Holt's and colleagues (2007) original survey instrument. These scales are contextual variables, readiness for change factors and attitudinal outcomes. Although data was consolidated from a fourth scale, individual attributes, we decided to control for data collected from this measure in order to isolate and concentrate our focus on the relationship between the remaining three scales. We sought to analyze the results from the survey using the three previously mentioned established measurement criteria.

The original, unabridged instrument included 114 questions. We modified the survey in close consultation with its author and submitted an abridged version (with a total of 81 questions) to potential participants. However, these questions were not categorized in the manner in which they would be analyzed, so as not to bias participants. We allotted a two-week time period to capture sufficient results from members. Upon obtaining the results, we ran statistical analysis (i.e., regression analysis) to determine if, in fact, contextual variables, readiness for change factors and attitudinal outcomes are all positively related, as we hypothesized in Chapter II.

IV.   FINDING AND RESULTS

A.   ANAD SURVEY INSTRUMENT ANALYSIS

In this chapter, we report the results of the nine specific hypotheses discussed in Chapter II.   We analyzed the relationships between variables to determine the significance of contextual variables, readiness for change factors and attitudinal outcome variables within ANAD. It is our belief the results provide readers valuable insight on the possible trends and recognizable relationships or non-relationships between important factors.   It also provides ANAD leaders insight into how independent and dependent variables in the survey could potentially affect or shape leaders' approaches to preparing the social climate for considerable IT change from SDS to LMP.

To begin, we highlight several observations about the organization. We sent the survey to 73 subject matter experts; we received 47 completed surveys—a 64 percent response rate. The average age of participants was 45-years-old and their average length of service is approximately 15 years. Exactly 50% of the respondents were male and 50% were female. The sample reflected a healthy cross section of all seven major departments at the depot.

Consistent with Holt and colleagues' (2007) readiness for change instrument, we utilized the Likert scale to assess participants' responses to various questions.   We established a defined range of possible responses from 1 (strongly disagree) to 7 (strongly agree). It is our belief that providing such a wide range of possible responses as opposed to the traditional 5 respondent classifications would provide greater detail as to the uniqueness of various individual responses.   The results presented in this chapter are intended to amplify statistical relationships derived from the survey. Charts depict responses as they relate to frequency (Y-axis) over the range of possible responses (X-axis).   In cases were an asterisk exist with respect to statements about correlations between variables and factors, one asterisk is an indication of significance at the .05 level of a two-tailed test and two asterisk is an indication of significance at the .001 level of a two-tailed test. In cases were we cite facts about regression analysis in the study, they are specifically stated as such.

Overall, a preliminary assessment survey results suggest some very noticeable trends. Management support is the most important readiness for change factor affecting the attitudinal outcome variable, change anxiety.

B.   AFFECTIVE COMMITMENT

Affective commitment is the attitudinal outcome variable that measures the extent to which ANAD respondents are emotionally attached to the organization. Eight questions in the survey instrument define affective commitment. High scores indicate an individual's strong involvement and identification with the organization. Responses scoring between 1 and 4 on the scale indicate members' emotional attachment to the organization ranged from strong disagreement to strong indifference, respectively. Responses scoring between 5 and 7 indicate members' responses ranged from basic agreement to strong agreement, respectively.

The results indicate an overwhelming number of participants are highly committed to the organization. Thirty-four respondents out of a sample size of 46 participants (74%) believe they are involved, feel an emotional attachment to the organization, and identify with the objectives of ANAD. Figure 3 depicts participants' responses to questions collectively defining affective commitment. The mean response was 5.04 and the standard deviation was .965 (approximately 19% variation in from the mean using normal distribution over the entire ANAD population).

Therefore, on average, participants believe they have the necessary skills and abilities to implement impending changes. Our analysis reveals that affective commitment is significantly correlated to job satisfaction, suggesting an important relationship between affective commitment employees' feeling about their jobs, and is significantly correlated with management support. Furthermore, the data also shows direct correlation between two contextual variables: trust in top management (.33) and perceptions of co-workers (.45).
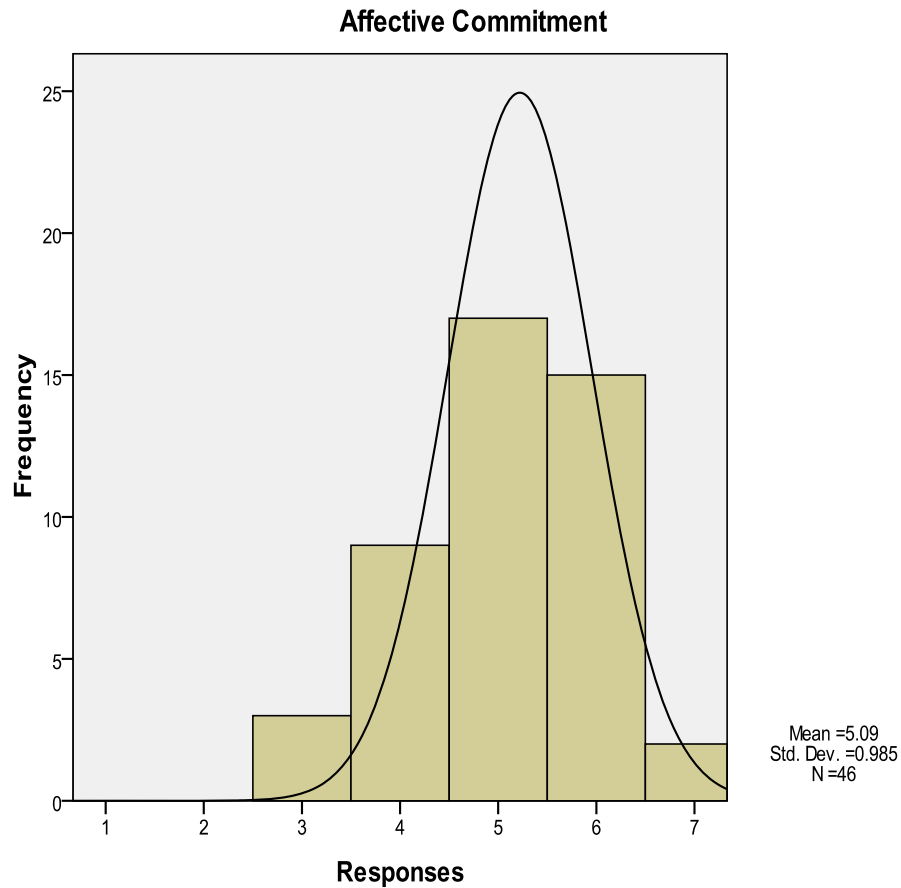
Figure 3.   Affective Commitment

C   EFFICACY

Efficacy is the readiness for change factor that measures the extent to which member's feel they possess the necessary skills and abilities to execute assigned tasks associated with the implementation of the prospective change. Six questions in the survey instrument define efficacy. High scores indicate employees' personally perceive themselves as having the skills and abilities to successfully make the transition. Responses scoring between 1 and 4 on the scale indicate members' responses ranged from strong disagreement to indifference, respectfully, on the six questions collectively defining self-efficacy. Responses scoring between 5 and 7 indicate members' responses

ranged from basic agreement to strong agreement on questions regarding the degree to which they believe they have the necessary skills and abilities to effectively implement the desired change.

The results overall indicate members are collectively uncertain as to whether or not they possess the necessary skills and abilities to successfully make the transition. The average response to the six collective questions defining Efficacy was 4.7 out of 7. This suggests that members are not entirely certain or completely confident that possesses the required skill-sets to transition from SDS to LMP. However, given the proximity of 4.7 to 5, it can reasonably be concluded that employees are fairly confident in their underlying abilities to manage necessary changes in the transition process. Our data also reveals a noticeable positive correlation (.46) exist between the contextual variable, perceptions of top management, and efficacy. Thus suggesting a trend exists between the two. However, it does not specifically suggest causal relationship. It is also important to note efficacy has no impact on any attitudinal outcome variable.

D.   JOB SATISFACTION

Job satisfaction is the attitudinal outcome variable that measures the extent to which ANAD respondents view their job positively. Three questions in the survey instrument define affective commitment. High scores are an indication that members' have positive perceptions of their jobs. Responses scoring between 1 and 4 on the scale indicate members' degree of job satisfaction ranged from strong disagreement to strong indifference, respectively, on the three questions collectively defining job satisfaction. Responses scoring between 5 and 7 indicate members' responses ranged from basic agreement to strong agreement, respectively on questions related to the degree to which they were satisfied with their occupation at ANAD.

The results indicate an overwhelming number of participants are highly satisfied with their jobs at ANAD.   Forty-two respondents   out of a sample   size of 46 participants (91%) indicated they were very much satisfied with their jobs. Figure 4 shows participants' survey responses to questions collectively defining job satisfaction.

The mean response was 6.04 and the standard deviation was .871 (approximately 14% variation from the mean using normal distribution over the entire ANAD population). Therefore, on average, participants are very satisfied with their jobs. As indicated previously, our analysis further reveals that a (.41) positive correlation to a fellow attitudinal outcome variable, affective commitment, suggesting a noticeable trend exist between the two. Furthermore, the data also shows a relationship between the readiness for change factor, appropriateness and job satisfaction, have positive correlation of (.32*). More importantly, the data also shows direct positive correlation between the contextual variable, perception of top management and job satisfaction have positive correlation of (.34*).
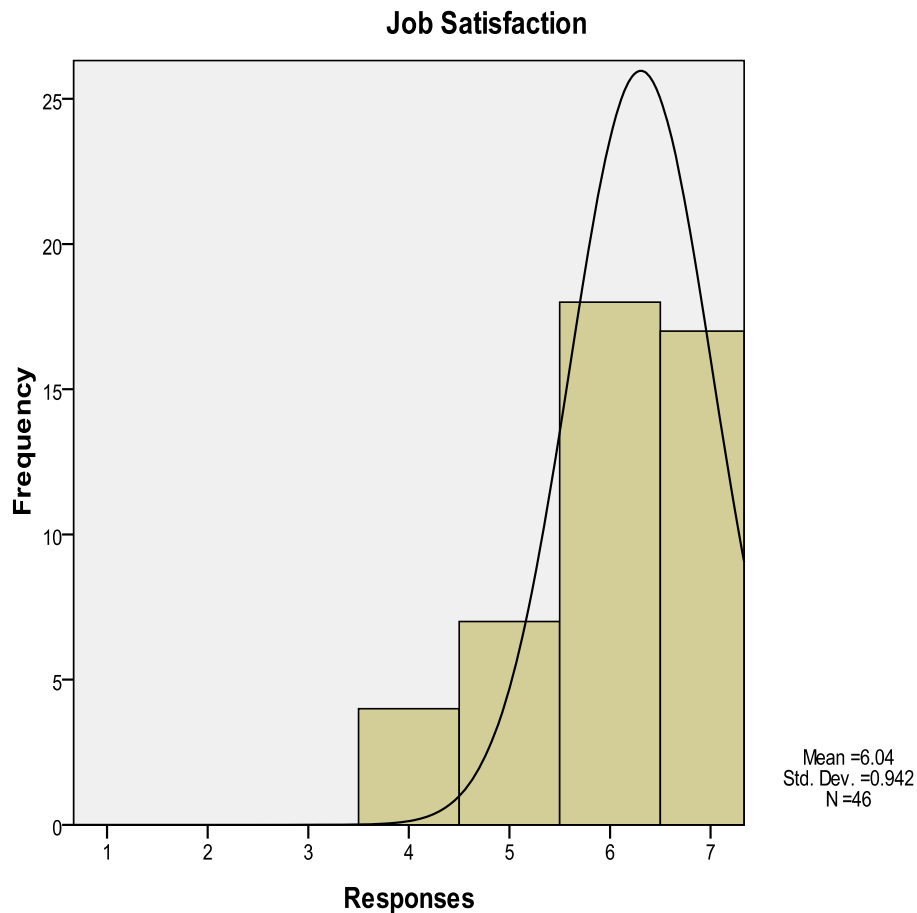

Figure 4.   Job Satisfaction

E. TURNOVER INTENTION

Turnover rate is the attitudinal outcome variable that measures the extent to which ANAD respondents have intentions to leave the organization. Five questions in the survey instrument define turnover rate. Low scores are an indication that members have little or no intentions of leaving their jobs. Responses scoring between 1 and 4 on the scale indicate the degree to which members absolutely do not intend to leave their jobs and the extent to which they are indifferent about turning over, respectively, on the five questions collectively defining turnover rate. Responses scoring between 5 and 7 indicate members' responses ranged from relative indifference concerning turnover and a strong commitment to turning over, respectively, on questions related to turnover rate their occupation at ANAD.

The results indicate an overwhelming number of participants do not intend leaving their jobs at ANAD. Thirty-eight respondents out of a sample size of 46 participants (83%) indicated they are not planning, and do not have intentions, of leaving their jobs. Figure 5 shows participants' survey responses to questions collectively defining turnover rate. The mean response was 2.77 and the standard deviation was .9 (approximately 32% variation from the mean using normal distribution over the entire ANAD population). Therefore, on average, participants are not giving sufficient consideration or planning to leave their jobs as a result of the pending change. Our analysis further reveals that, although turnover intentions is an important indicator in determining employee behavior, this particular attitudinal outcome variable does not specifically correlate to any contextual variables or readiness for change Factors directly.
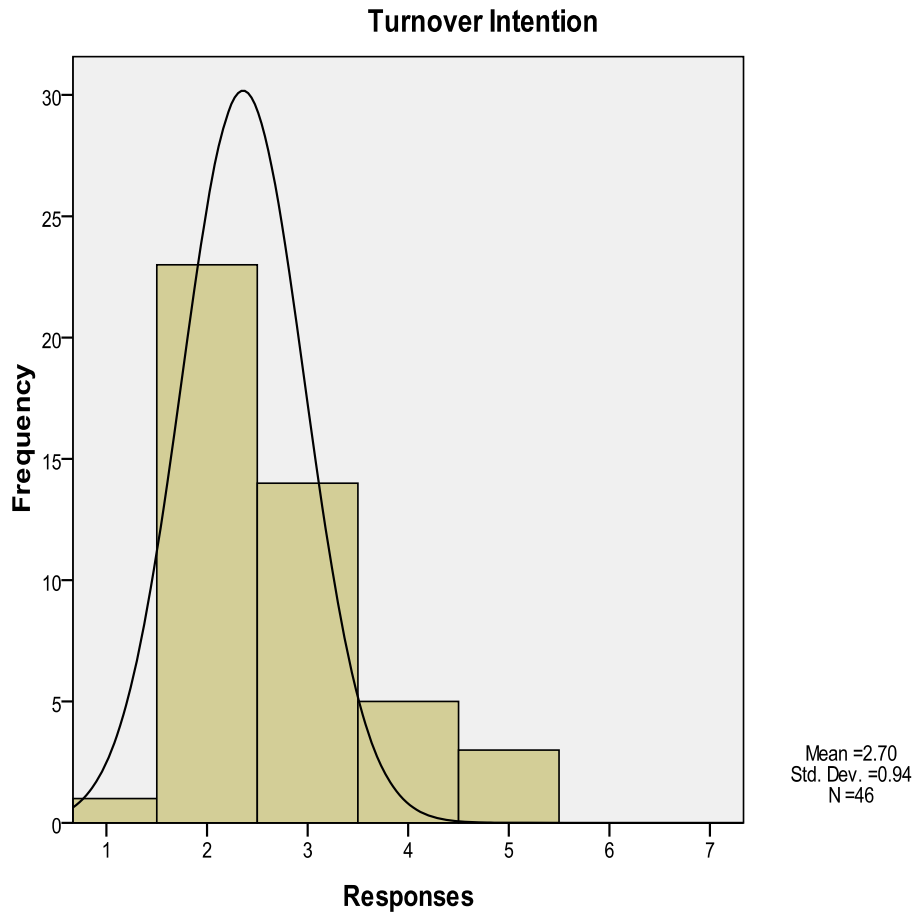
Figure 5.   Turnover Intention

F.   MANAGEMENT SUPPORT

Management support is the readiness for change factor that measures the extent to which respondents feel that ANAD's leadership and top managers are committed to and support the implementation of the prospective change. Six questions in the survey instrument define members' perceptions of management support with the organization High scores are an indication of members' belief that management supports the change effort. Responses scoring between 1 and 4 on the scale indicate members' responses ranged from feeling strongly that management does not support the change initiative, to their belief that management's actions are indifferent, respectively, on the six questions

collectively defining affective commitment. Responses scoring between 5 and 7 indicate members' responses ranged from their basic belief that management supports the change, to strong belief that management fully supports the initiative, respectively, on questions related to management's support of prospective change IT at ANAD.

The results indicate that an overwhelming number of participants feel the ANAD's leadership fully supports the change initiative. Thirty-six respondents out of a sample size of 46 participants (78%) believe they are involved; feel senior leader supports the change initiative at ANAD. Figure 6 shows participants' survey responses to questions collectively defining management support. The mean response was 5.14 and the standard deviation was 1.38 (approximately 27% variation in from the mean using normal distribution over the entire ANAD population). Therefore, on average, participants believe management is supports and is committed to the change. Two contextual variables have very high positive correlation to management support, Perceptions of top management (.65) and perceptions of organizational support (.58). However, the data does not specifically speak to any cause and effect relationship between the fore mentioned variables and factors.
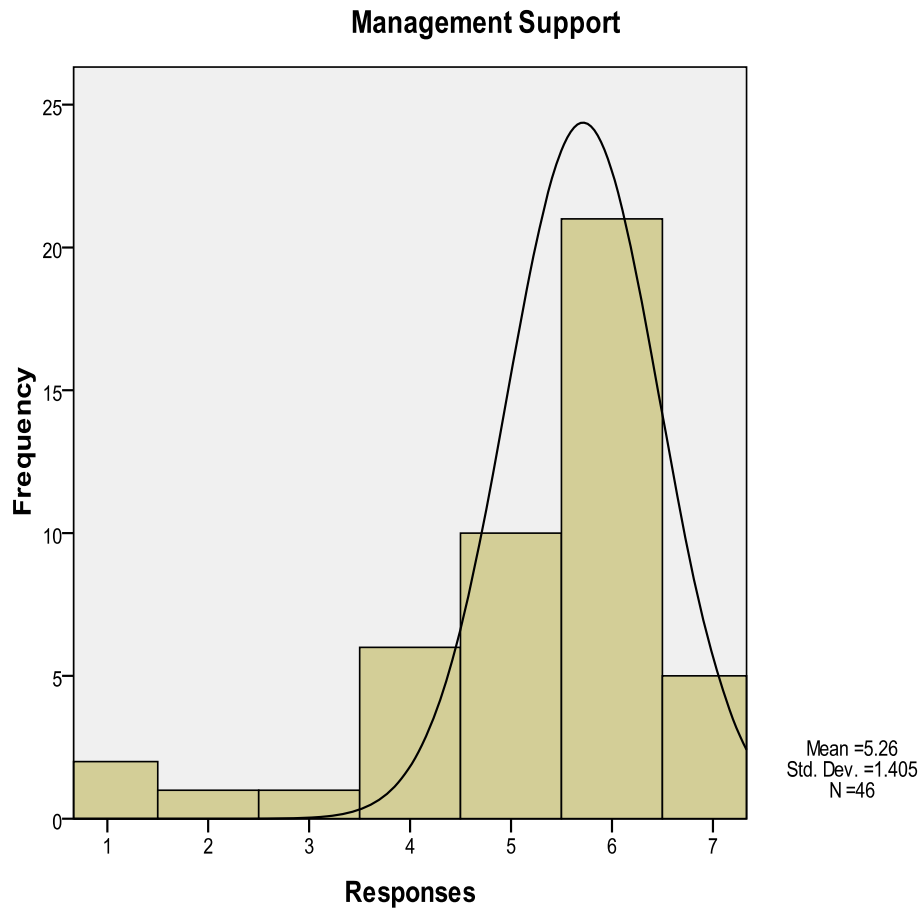
Figure 6.   Management Support

G.   RESULTS

In Chapter II we made two general statements about the relationships between contextual variables, readiness for change factors and attitudinal outcome variables to provide a basic explanation of our expectations on how these variables ultimately affect ANAD's social climate as they undergo significant IT transformation.   The two statements we made were, in general, contextual variables are positively related to readiness for change factors and readiness for change factors were positively related to attitudinal outcome variables. Based on those to generalizations, we formulated a total of nine specific hypotheses to explain the two general statements. Five of which identified

what we would expect in analysis of the data as it relates to contextual variables and readiness for change factors and the remaining four hypotheses explained what we would expect to see in the relationship between readiness for change factors and attitudinal outcome variables. This section tests the validity of our hypotheses.

1.   **Contextual Variables and Readiness for Change Factors Hypotheses Analysis**

Hypothesis 1a: *Employees' perceptions of organizational communication climate are positively related to appropriateness*

We formulated this hypothesis under the belief that if employees feel they consistently receive relevant information in a timely fashion, they were more likely to perceive management's change initiatives as legitimate and appropriate for ANAD. The results of the survey support this hypothesis and show a direct relationship between members' perceptions of organizational communication climate and appropriateness. Specifically, it is significant at the .05 level (.003). The statistical data shows the significance of member's perceptions of organizational communication climate as a predictor of appropriateness. Therefore, members' perception of organizational communication in the workplace has a statistically identifiable impact on whether or not they view the pending change as appropriate for their environment.

Hypothesis 1b: *Employees' perception of top management's ability is positively related to management support*

This hypothesis developed under the assumption that if employees' feel organizational managers possess the necessary skills and capabilities to successfully complete mission objectives, they are more likely to have a positive perception of management support. The result of the survey strongly supports this hypothesis and shows a direct relationship between employees' perceptions of management's ability and management support. Specifically, it is significant at the .001 level (.000). The statistical data shows the significance of employees' perceptions of management's ability as a

predictor of management support. Therefore, employees' perception of management's ability has a statistically identifiable impact on whether or not they have positive or negative perceptions of management support.

Hypothesis 1c: *Employees' trust in top management is positively related to appropriateness*

We developed this hypothesis based on the belief that if employees have considerable trust in their leadership and are willing to allow organizational leaders to control issues important to them, the more likely they are to view the change initiative as legitimate and appropriate. Although the data does acknowledge a trend between the two elements, it does not however indicate a statistically identifiable relationship beyond similar trends. Regression analysis shows no cause and effect relationship. In essence, if an organization has considerable trust in top management it does not necessarily mean they will view pending changes as appropriate for the organization as well.

Hypothesis 1d: *Employees' perceptions of organizational support are positively related to personal valence*

This hypothesis is based on the belief that if employees feel that the organization values their service, contributions and cares about them, the more likely they are to believe they will benefit from the prospective change. The results of the survey support this hypothesis. There is a positive correlation, at the .05 significance level, between perceptions of organizational support for change and personal valence as it relates to ANAD's impending IT transformation. If employees feel the ANAD values their service, contributions and cares about them, it suggests they are likely to believe they will personally benefit from the prospective change organization.

Hypothesis 1e: Employees' perceptions of organizational communication climate and perceptions of their co-workers are positively related to efficacy

This hypothesis is based on the belief that if employees feel they consistently receive relevant information in a timely manner and have confidence in their co-workers' capabilities, they are more likely to feel they possess the skills and abilities to execute tasks and activities associated with the prospective change. The survey results from

ANAD do not support this hypothesis. On both fronts, as it relates to members' perceptions of the organization's communication climate and their perceptions of fellow co-workers, there appears to be no statistically validity to this hypothesis. Therefore, members' perception of the ANAD communication climate and their fellow coworkers does not any impact whether or not they feel they possess the necessary skills to sufficiently manage the change.

2. Readiness for Change Factors and Attitudinal Outcome Variables Hypotheses Analysis

Hypothesis 2a: *Employee efficacy is positively related to job satisfaction*

This hypothesis is founded on our belief that if employees feel they have the requisite skills and capabilities to execute the assigned tasks and activities associated with implementing pending changes, the more likely they will have high job satisfaction. Our data does not support this hypothesis and statistically does not reveal a cause and effect relationship between the independent and dependent variable in this hypothesis. Therefore, there is statistically identifiable support that an employee's confidence in their particular abilities is a predictor of their level of job satisfaction.

Hypothesis 2b: *An inverse relationship exists between management support and change anxiety*

We hypothesized if employees feel that the organization's leadership and management are committed to and support implementation of the prospective change, they will be less concerned or anxious about its implementation. The survey results support this hypothesis. Our data also shows statistical significance between the independent and dependent variables at the .05 level (.019). Therefore, regression analysis suggest the more members' of ANAD believe the leadership is strongly committed to implementing and acting upon prospective change, the less likely they are to feel anxious and apprehensive about the transition.

Hypothesis 2c: *An inverse relationship exists between management support and turnover intentions*

It was our assumption if members of ANAD feel that the organization's leadership and middle managers are committed to and demonstrates strong support for impending change; they are less likely to have intentions of leaving the organization. Based on the results of the survey, this hypothesis is not substantiated. There is no statistical evidence that employees' perceptions of how committed their leaders are to change that it will eventually result in members desiring not to leave the job and avoid turnover. Additionally, there is no statistically identifiable cause and effect relationship between the two variables.

Hypothesis 2d: *An inverse relationship exists between personal valence and change anxiety*

We believe that if employees felt they would personally benefit from the change, they were less likely to develop concerns or become anxious about an upcoming change. The results of the survey instrument show statistical support for this hypothesis. Its validity is more than adequately expressed in regression analysis at the .05 level, which identifies an obvious trend between members belief they will personally favorably gain from the change initiative; thus resulting in a considerable decrease anxiety levels among the population. The results seem to suggest employees are willing to trade some anxiety about the unknown for a beneficial outcome.

H.   CHANGE ANXIETY

It is clear that change anxiety is perhaps the most statistically relevant attitudinal outcome variable shaping effecting member's behavior as it relates to major IT change at ANAD. To emphasize this point, two readiness for change factors (management support and personal valence) correlate with change anxiety. One contextual variable correlates directly with change anxiety, perceptions of co-workers. In light of its importance, we specifically dissected and evaluated each of the three questions defining change anxiety. The information presented in this section is not intended to undermine the individual

importance of other attitudinal outcome variables but rather to show the significant of change anxiety as it relates to management support and members' perceptions of management's abilities.

The first question asked as it relates to change anxiety focused on how anxious employees felt about the pending change. *I feel anxious about the implementation of this change?* This question concentrates on a member's feelings about the transition from SDS to LMP and seeks to concentrate directly on the question defining change anxiety irrespective of their perceptions of management's ability to effectively implement the initiative and their independent assessments of management support. Figure 7 depicts participants' responses utilizing a normal distribution over the population.

I feel anxious about the implementation of this change.
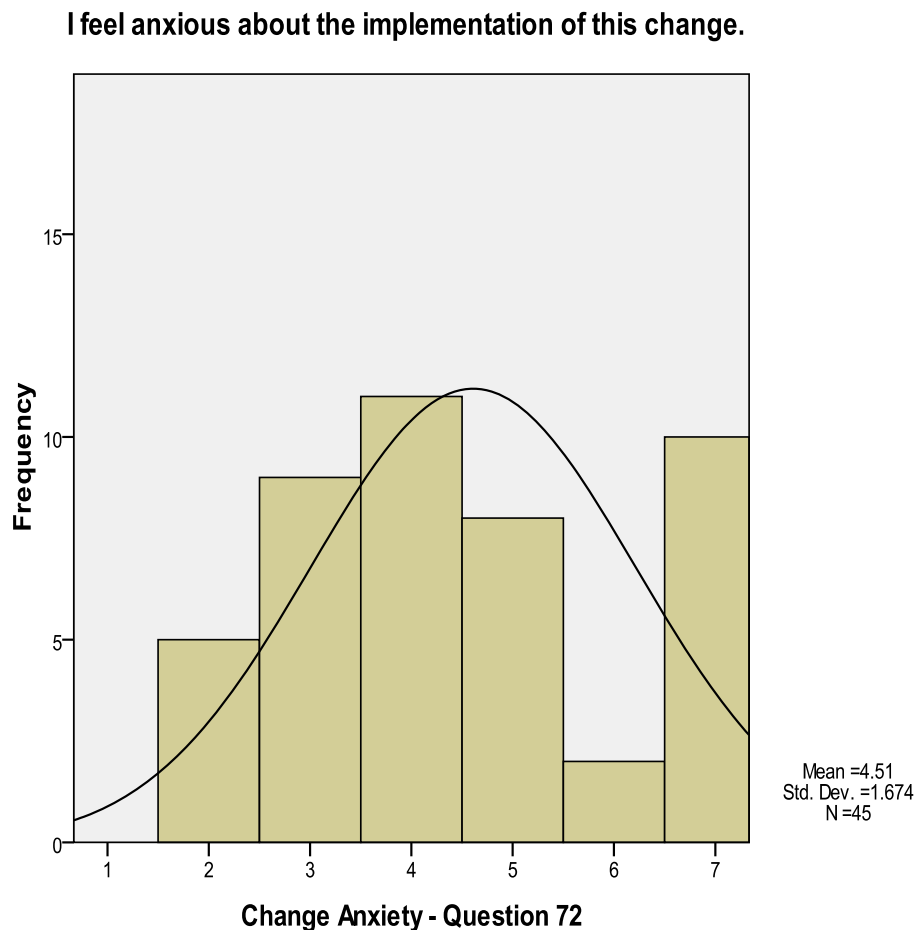
Figure 7.   Change Anxiety-Question 72

The figure reveals there is some agreement regarding change anxiety at the depot (4.51/ 7) even though members are conscious of some very broad aspects of LMP, and recognize obvious structural changes made to support the transition, such as office restructuring and movement of personnel. Although this is not entirely consistent in every respect with all respondents given the considerable standard deviation of 1.674, it is however quite clear a certain level of apprehension exists about the pending transition despite the fact that they have considerable trust in top management and very high job satisfaction assessments of their workplace.

Participants' response to the second question solidifies their concerns and provides supporting information on how they feel about the impending change to their work environment. *The thought of this change worries me*. Figure 8 shows respondents' evaluations of how concerned they were about many unknown aspects of LMP. As one can clearly observe, there are even higher concentrations of the population concerned with the change than those feeling anxious about management's implementation of the prospective change.

The thought of this change worries me.
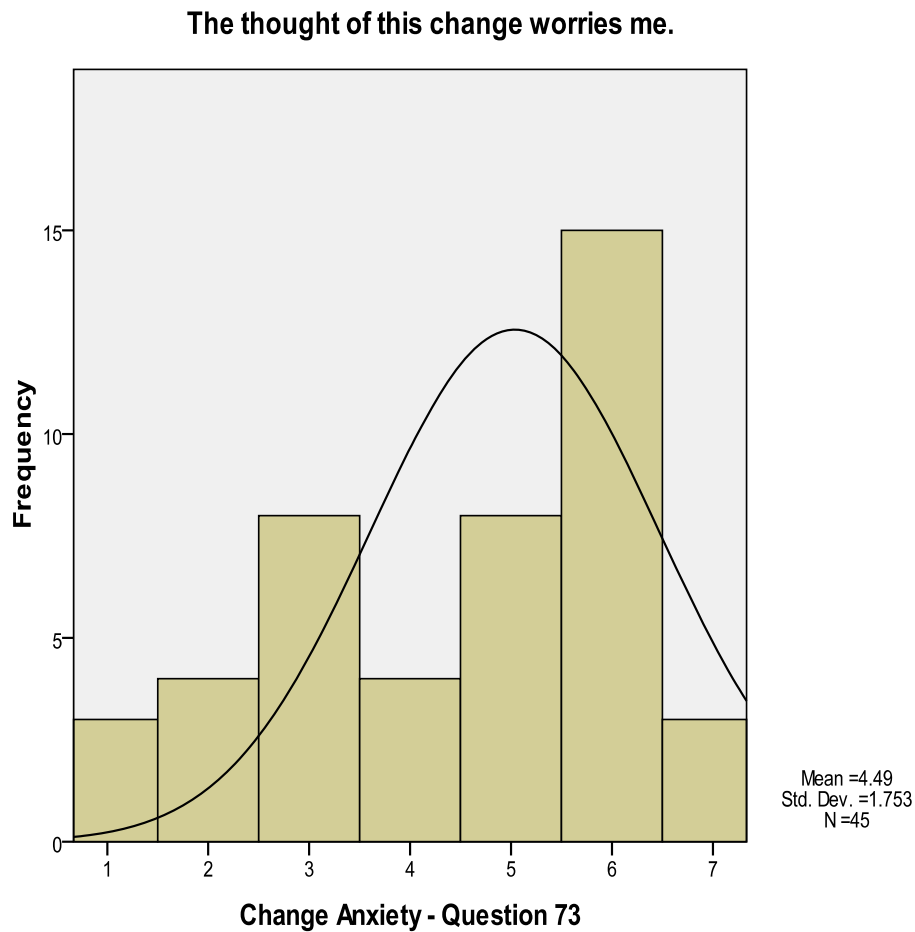
Figure 8.   Change Anxiety- Question 73

The final question defining change anxiety bluntly addresses how the ANAD population, in general, will likely respond to attempts to implement changes in a situation in which they are both anxious and worried about alterations to their work environment. As one can observe in figure 8, the responses are entirely consistent with that of the previous question. The participant's answers are also heavily concentrated slightly above the mean.   This suggests that if respondents are both anxious and worried about prospective change, they are even more likely to consciously or subconsciously resist any management attempts to change from the environment they've grown accustomed to one in which they are largely unfamiliar.

Right now, I am somewhat resistant to this change.

Mean =5.04
Std. Dev. =1.77
N =45
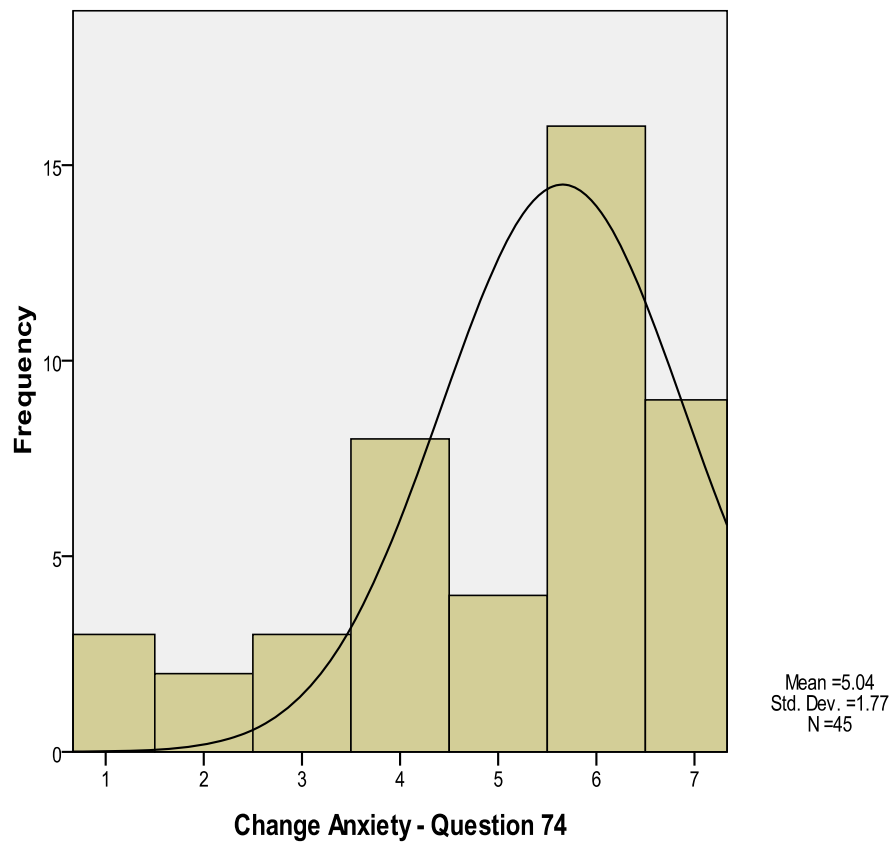
Figure 9.   Change Anxiety- Question 74

I.   CONCLUSION

Of all the internal and external correlations between variables and factors defining contextual variables, readiness for change factors and attitudinal outcome variables, the relationship that is most prominent is that which exists between members' perceptions of management's abilities to implement intended change, management support, and change anxiety. Throughout this chapter, we have clearly stated the underlying importance of all three factors as they relate to affecting employee behavior in a change environment. Strongly based on available data from the survey instrument, it is our assessment that management support is the most important readiness for change factor in mitigating

employee anxiety and any potential resistance to changes in the workplace. Management support serves as a conduit between employee perceptions of management's ability and change anxiety. In fact, management support is the determinant factor in relieving change anxiety at ANAD. Figure 10 depicts a relatively simple assessment of the importance management support between the two entities.

Independent Variable	Dependent Variable	Dependent Variable
Contextual Variables Perceptions of Mangement's Abilities	Readiness for Change Factors Management Support	Attitudinal Outcome Variables Change Anxiety
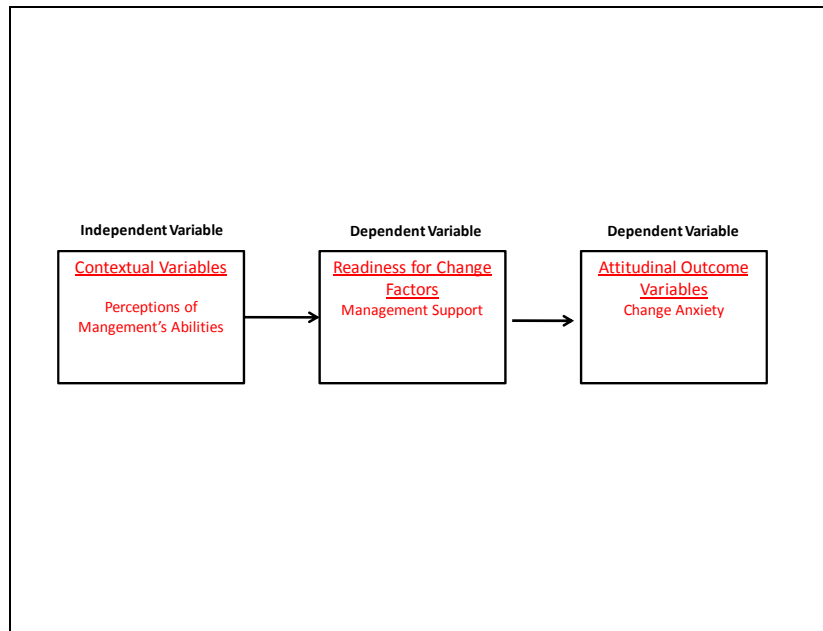
Figure 10.   Importance of Management Support

The data clearly suggests that even though members have confidence in ANAD management abilities to implement the change in addition to their considerable favorable responses regarding management support, they are still apprehensive about the transition from SDS to LMP. In other words, simply because they support and believe in the organization's leadership, that does not necessarily relieve anxiety about the change, and further intimates that management will inevitably have to independently address employees' specific concerns about LMP. It is abundantly clear members are very satisfied with their leadership and confident in its abilities. Thus, employees are willing to allow management to convince them that change is necessary, relevant, and ultimately beneficial to war-fighters, even though they are largely uncertain as to what it specifically means for them.

V. CONCLUSIONS AND RECOMMENDATIONS

A. RECOMMENDATIONS

We began this professional project with the basic premise that organizations, at their root, are social organizations no matter what the degree of their complexity. They are essentially a matrix of human interactions communicating and sharing information at various levels. Therefore, it is our core belief that human beings and all their complexities are at the heart of any enterprise and its efforts to move forward on change initiative. "Organizations are inherently social systems." The people in these systems have identities, relationships, communities, attitudes, emotions, and differentiated powers (Harvard Business Essentials, 2003). The purpose of this project was to examine the ANAD social climate as it relates to the depot's impending major transformation from SDS to LMP as its ERP solution to modernize its logistical support IT infrastructure to the Army and Marine war-fighters. It is important to note this project was not undertaken as a result of any recognizable performance deficiencies or operational inefficiencies on the part of the ANAD leadership team and its personnel. ANAD, historically and currently, maintains a well-established reputation for delivering first-rate maintenance and logistical support to war-fighters in a very timely matter. Their commitments to the Army's objectives are lauded throughout the DoD. This project was pursued as a measure of forward thinking on the part of the command and its consciousness regarding depot personnel with to the pending introduction of LMP. Although there are several strongly positive data-based recognizable trends as to how members of the organization view their leadership and its ability to support the change effort, anxiety still persist in the mist of these trends.

In this chapter, we propose some recommendations to assist the ANAD leadership in their efforts to facilitate a smooth transition from SDS to LMP. Since we believe people and their various intricacies are at the core of any organizational change effort, our recommendations are concentrated on people rather than complex systems and business processes. It is equally important to note the recommendations proposed in this chapter are intended to mitigate change anxiety. No recommendation can completely

eliminate leaders' efforts to dissolve anxiousness and apprehension on the part of their membership, no matter how innovative; neither are the ideas proposed intended to be all-encompassing and entirely unfamiliar. As long as there is a degree of uncertainty about significant change, particularly IT, there will be at least some measure of anxiety, even among the most ardent supporters of the initiative. We also intended to draw recommendations and suggestions based on the dataset and measured personal experience with knowledgeable depot leadership personnel. It is critical that we recognize that human beings are creatures of habit and they have well-defined routines that make change difficult to come by. Therefore, as we examine the various recommendations mentioned herein, patience must be at the forefront of thoughts in proceeding forward towards the intended end-state.

Before making any recommendations, we must first recognize the progress ANAD has made in its effort to prepare for the major transition from SDS to LMP. Over the last few years, since depot leadership has been aware of the pending change, in accordance with higher levels of command, ANAD has taken two pivotal and notable steps to prepare employees for the IT transformation (1) they've developed an LMP Coordination Office and team charged with the very important responsibility of consolidating, coordinating, and communicating all efforts supporting the change from SDS to LMP and (2) they have made some preliminary personnel and structural changes within the organization that provide a visual and vivid indication that the transition will occur. In fact, it must be clearly stated that the change readiness process is well underway at ANAD, and they have made measurable progress under the most strenuous of circumstances with precious little information on the particulars of LMP. They have also begun training personnel on the basic ERP language of LMP absent actual training modules or LMP contractor support as they are not currently deployed and thus are not afforded such critical information at this time.

B.   RECOGNIZING THE IMPORTANCE OF THE ANAD SOCIAL CLIMATE

Before any significant change can take place, particularly IT, their leadership must thoroughly understand and recognize that the ANAD social climate is an integral

part of the LMP transformation process. Although this recommendation sounds fundamental and perhaps elemental to the well informed, many leaders do not consciously recognize its importance. To the extent many do, they often see it as an adjacent element of the change process. Or perhaps they may see it as important but not central to the transition. This is the most basic and fundamental aspect of any organizational attempt to positively impact its internal culture as it relates to stated objectives and a lack of recognition is the area eventually leads to little or no consideration of its role in the change effort. It is not uncommon for most organizations implementing commercial ERP solutions to pursue operational objectives with little or no formal or informal knowledge of social realities in the organization they wish to change. ANAD is a highly proficient logistical supporter of war-fighters with over 4,377 organic personnel. It is not a stretch of the imagination to acknowledge its success based on a combination of important factors and one such central factor are countless personal relationships and the innumerable essential business processes dependent upon such relationships.

Organizations are not purely an aggregate of efficiently running business processes and an immediate recognition of this and seeing the ANAD social structure as a central part of the IT transformation process from SDS to LMP is the first step. Failure to immediately identify social anxieties and tensions associated with the change process can have immediate impact on at least two essentially important aspects of the change process, time and money. The very popular phrase "time is money," undoubtedly has considerable significance as it relates to the social climate of any organization. A lack of understanding in this area can and often does have an adverse effect on the change initiative in the fore mentioned areas. A simple implementation plan that does not account for importance of the organizational social climate and leaders at all levels are ultimately required to make the change, can and often does significantly extends the time required for implementation and the absorbingly high cost.

Such recognition must be made real and tangible in the every day actions of the depot leadership at all levels. Typically organizations rely heavily on one level of leadership within the organization to recognize the extreme importance of the social

dynamic among its members. But an endeavor of this magnitude requires full recognition of the social aspects of the organization to effectively move forward or gain any substantial ground towards manifestation of a new business reality. Based on our assessment of the data compiled from the survey, the ANAD senior leadership has invested some time and consideration of the social environment among its population across several pivotal departments that will be directly affecting in this process. The leadership's investment in its social climate can be recognized in how management is perceived among employees. As stated earlier, our study noted high levels of management support and perceptions of management's abilities suggesting that management has the necessary foundation to convince them that they are both aware and understand their concerns about change.

Under ordinary circumstances, getting every stakeholder in the change effort to consciously accept cultural realities within their respective departments, is often very difficult to accomplish. However, this is increasingly the case with more challenging hierarchically structured organizations; such is the case with ANAD. It is a largely civilian population organized and managed under military leadership, and as such, subject to well-defined roles and procedures that traditionally do not recognize the subtle social interaction among military and their importance in the change process. In the context of a largely civilian population, social interactions and environments have tremendous impact on any initiative for change that potentially threatens to alter their existing reality. A simple and genuine recognition of the social dynamics of the organization from the collective leadership of ANAD can go a long way in the effort of facilitating a smoother transition when employees realize their leadership is genuinely concerned about their anxiety or apprehension towards change. The rank and file is the heart of any organization, and in this case, they represent the actual managers and users of SDS and LMP. Ultimately, the rank and file must be thoroughly convinced that management is recognizes social realities and is heavily invested in their concerns. Whether or not this is communicated through the ANAD Human Resources Department

or other media and communication outlets, it is absolutely essential that management emphasize the importance of tackling social challenges concerning change, and if at all possible, communicate that importance up the chain of command as well.

C.   DEPARTMENTAL LEVEL BUY-IN VERIFICATION AND CHANGE AGENT IDENTIFICATION

The senior level of leadership at ANAD consists of the depot commander, the commander's primary staff, and departmental heads or directorates. Although there are numerous important leaders throughout the organization with measurable input, these members of the organization are absolutely essential to communicating and promoting the pending IT initiative. Any change initiative of a substantial magnitude requires change agents to be successful in convincing the rank and file of the importance of effort, and more importantly, this must be clearly understood by senior leadership. It can reasonably be said that change agents are perhaps the most important and effective resource at the commander's disposal when it comes to effectively convincing a substantial number of employees who have buy-in to endure the process of transformation (Cheung-Judge & Powley, 2006). Change agents act on the commander's behalf, and enthusiastically sell the message to the rank and file of the organization. Given ANAD considerable size and population, it is impossible for the commander to single-handedly communicate the importance of the change even if he or she is completely convinced.

One of the first steps to creating a change agent is obtaining buy-in verification from senior members of the organization, namely department heads. Buy-in verification speaks to verifying department heads in the organization, familiar with the impending change, are in fact totally convinced and committed to the cause. Obtaining buy-in commitment from the several department heads of ANAD goes far beyond merely communicating the objectives of the transformation. It also goes considerably further than reciprocal communication in which they inform management that they comprehend the effort. It is not sufficient for them to simply agree that change is coming and comprehend it; they must be both convinced and committed to the change initiative to be an effective change agent. Once department heads have been verified as effective change

agents, these individuals have the necessary encouragement and enthusiasm of the commander to promote the agenda to leaders in their respective departments. The importance of obtaining buy-in verification, in many instances, is likely to reduce change anxiety. If employees feel they have been sufficiently consulted throughout the process and that their input is integrated in the change initiative, they will perhaps be more willing to accept the transformation even though they may disagree or remain uncertain about its dimensions.

The verification process is based entirely on the commander's belief that the department heads are truly committed to the need for change. If verification of buy-in is not actually obtained, change agents do not really exist within the organization; thus any efforts to obtain measurable progress in improving change-readiness and making it a reality among the rank and file, ultimately falls short of intended outcomes. Change agents are not merely echoers of the commander's priorities regarding the change; they serve the all important function of mobilizing energy and sustaining commitment to the objective. Given their all-important purpose, verification is a must. Once this is achieved, we believe department heads will amplify the objective accordingly. Although this suggestion is not captured in our dataset, it is entirely reasonable that they would be the most effective given their positions, knowledge base and everyday interactions, and social proximity to LMP managers and operators within their departments. In any event, it is essential that senior leadership is completely convinced and support the intended change measure. Once the command element achieves this objective, we believe they can effectively operate through a limited number of important individuals. This recommendation is important given that ANAD is deeply integrated multi-echelon organization. Therefore, we believe in this setting, change agents are the only really effective means of communicating the importance of LMP through the various layers of social structure.

D.   EFFECTIVELY COMMUNICATING THE "WHY" (PROBLEM RECOGNITION AND IDENTIFICATION)

Effectively communicating why the IT transformation from SDS to LMP is necessary another very critical element. It is most difficult in organizations such as

ANAD because they suffer from "Tyranny of Success." This is a common phrase or concept used to describe very historically successful organizations undergoing change initiatives. ANAD is an extremely successful and effective organization that is central to the Army and Marine Corps logistical and equipment readiness and this success is entirely based on its incredibly skilled and knowledgeable personnel and their use of SDS over the years. They have successfully acclimated to the SDS and are comfortable and know the intricacies of navigating the legacy system. Communicating why the change is necessary in this setting is extremely challenging and requires all the more effort. Therefore it is very important the management clearly state and restate why changing to LMP is necessary in the mist of the depot's current success. Without this emphasis, rank and file members of the ANAD team could perceive the change as unnecessary when balanced against their current success. They could also become passive resisters or lackluster supporters of the effort to ensure they do not endanger their current success. Therefore, we believe management must reinforce the necessity of change, in the mist of success, through all media outlets available.

It is also important that all members of the organization share a common understanding of why the change is necessary (Beckhard et al., 1987). This speaks mainly to clearly identifying the problem so that a common approach and solution can be achieved. LMP may mean different things to different departments and people in the organization. Recognizing that LMP is a deeply integrated system and perhaps slightly intimidating on some levels because of unfamiliarity, it will enviably serve different purposes to different departments based on mission, we recognize variability on purpose. However, in a much broader sense, there must be a shared vision among the population. Since LMP is largely unfamiliar to personnel in detail, we recommend focusing members on the war-fighters. The reason we recommend this is because our dataset shows high levels of job commitment and very low levels of turnover intentions. We interpret this to mean employees have extremely favorable perceptions of their workplace and are committed to the purpose it serves beyond the physical grounds of the installation. It is our belief that members are more willing to accept change from the prospective of improved logistical support for the war-fighter rather than focusing internal business

process improvements. This should also be an integral part of the everyday communication and metaphor usage throughout the depot when emphasizing the importance of LMP. Furthermore, this approach will allow them to focus on intended results verses the matrix of business processes required to achieve those results. Many times people become absorbed in their piece of the IT structure verses the larger objective or greater good. Reorienting people's focus while maintaining their significance will greatly improve their attitude towards the transition. This approach will also help management focus members away from personal valence and more on organizational valence. As noted in or dataset, valence speaks to the extent to which members of ANAD feel they will benefit from the implementation of the prospective change.

E.   OMNI-DIRECTIONAL COMMUNICATION

Finally, the central piece of all recommendations listed in this chapter is communication. As is the case in many organizations, success is won or lost on the basis of communication. It has been clearly emphasized throughout this literature that ANAD is a hierarchical organization and assumes it structure from that of a military environment. Often times, communication in a military setting is that of traditional telegraph, in that information only flows in one direction, i.e. uni-directional communication (Suchan, 2007). This suggests that higher level of commands frequently communicate downward to subordinate levels but have very little or no ability to receive feedback from those charged with executing intended objectives. This often produces a sense of relevance and non-involvement in the decision-making process and indirectly reinforces their perceptions that they have no buy-in in the process. In light of this, it is not unrealistic to believe that participants feel their concerns may or may not be adequately addressed. Thus, we suggest the concept of omni-directional communication. This notion intimates that management is very receptive to feedback from lower levels and alternate channels with impunity.

Concentrating on feedback represents a concentration on the concerns and substantive inputs of subordinates from management's perspective. If members sincerely believe management genuinely cares and accepts their input, they are more likely to view themselves as team members, rather than coach and player. They are also more likely to

act in harmony with intended objectives as participants in the change-readiness process as opposed to information –suppressed employees in the implementation effort. Although omni-directional communication possess some risk to productivity and time-line management when moving forward on a rigid schedule, it may be necessary on some level to engage in a healthy discussion about the type of approach required to reach the desired end-state.

F. CONCLUSION

Throughout this project, we've sought to exam, analyze and assess two central elements of the change process at ANAD, IT and social climate responsible for making it a reality. Based on available data captured in our survey, we believe management at ANAD is in a remarkable position to influence the perceptions of it population as it relates to the transition process from SDS to LMP. This is based on the fact strongly supported in the dataset (1) employees have very high perceptions of management's ability to implement the intended change (2) They sincerely believe management supports and cares about them and (3) They have very low intentions of turning over which directly suggest they collectively have very high job satisfaction. Undeniably, these are extremely positive trends that provide the leadership the necessary platform required to prepare the organization for the change process or improve their readiness. However, the data also shows considerable change anxiety in the mist of very positive indicators.

It is clear that limited information about LMP is directly driving change anxiety and is in no way connected to their perceptions management's abilities, perceptions of management support, or their level of job satisfaction. We believe of all the readiness for change factors, management support is the determinant factor in relieving an organization's change anxiety. As previously stated, management support serves as a conduit between members' perceptions of management's abilities and employees' anxiety for change. In summation, management at ANAD has the power to shape their organization's readiness for major IT change. The sentiments sporadically expressed, such as members' desires to leave or retire, are valid to some extent, but not sufficient

enough to prevent management's efforts in moving forward towards preparation for a new ERP solution in support of the war-fighter. Employee's willingness to be persuaded, while truly uncertain about what the transformation from SDS to LMP specifically means, is a good indication of how they feel about management.

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Correlation Table

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Appropriateness	1	.295*	.581**	.212	.109	.324*	.087	-.037	.252	.021	-.049	-.027	-.039	.204	.040	-.140
2. Management Support	.295*	1	.445**	.294*	.528**	.714**	.575**	.454**	.615**	.369*	.219	.027	.380**	.393**	.135	-.151
3. Efficacy	.581**	.445**	1	.353*	.230	.433**	.227	.287	.358*	.232	.220	.156	.246	.318*	.314*	.224
4. Personal Valence	.212	.294*	.353*	1	.255	.153	.377*	.430**	.292	.304*	.262	.029	.227	.331*	.135	.010
5. Trust in Top Management	.109	.528**	.230	.255	1	.656**	.660**	.465**	.545**	.433**	.430**	-.120	.342*	.216	.060	-.024
6. Perception of Top Management Ability	.324*	.714**	.433**	.153	.656**	1	.599**	.570**	.831**	.509**	.335*	-.098	.531**	.253	.206	.039
7. Communication Climate	.087	.575**	.227	.377*	.660**	.599**	1	.690**	.664**	.669**	.426**	-.039	.443**	.300*	.072	-.058
8. Perception of Organizational Change Climate	-.037	.454**	.287	.430**	.465**	.570**	.690**	1	.677**	.610**	.532**	-.157	.647**	.200	.248	-.055
9. Perception of Organizational Support	.252	.615**	.358*	.292	.545**	.831**	.664**	.677**	1	.577**	.390**	-.218	.700**	.343*	.123	.027
10. Perception of Co-Worker Support	.021	.369*	.232	.304*	.433**	.509**	.669**	.610**	.577**	1	.366*	-.175	.453**	.398**	.215	.108
11. Job Satisfaction	-.049	.219	.220	.262	.430**	.335*	.426**	.532**	.390**	.366*	1	-.305*	.707**	.099	.130	-.018
12. Turnover Intention	-.027	.027	.156	.029	-.120	-.098	-.039	-.157	-.218	-.175	-.305*	1	-.280	-.213	.002	.022
13. Affective Commitment	-.039	.380**	.246	.227	.342*	.531**	.443**	.647**	.700**	.453**	.707**	-.280	1	.191	.202	.094
14. Change Anxiety	.204	.393**	.318*	.331*	.216	.253	.300*	.200	.343*	.398**	.099	-.213	.191	1	-.078	-.137
15. Age	.040	.135	.314*	.135	.060	.206	.072	.248	.123	.215	.130	.002	.202	-.078	1	.482**
16. Gender	-.140	-.151	.224	.010	-.024	.039	-.058	-.055	.027	.108	-.018	.022	.094	-.137	.482**	1

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